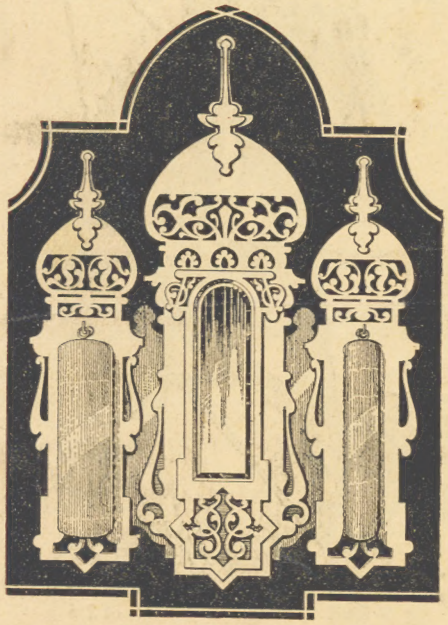
Hobbies WEEKLY



LARGE DESIGN CHART

ORIENTAL HALL BRUSH HOLDER

FREE WITH THIS ISSUE

WOODWORK - CHEMISTRY
PHOTOGRAPHY - PHILATELY
MODEL RAILWAY NOTES, Etc.

September 21st. 1935

2D

Vol. 80. No. 2083

THE FRETWORKER'S AND HOME CRAFTSMAN'S JOURNAL

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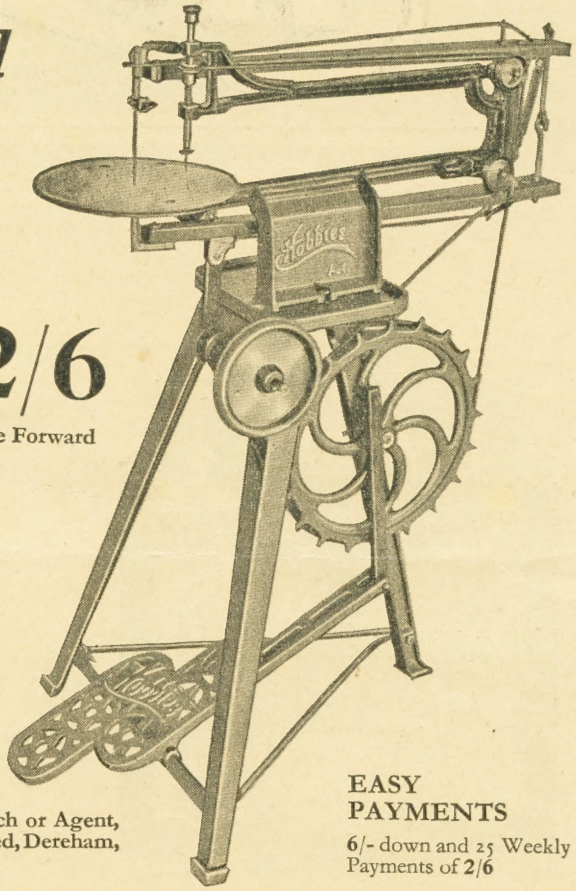

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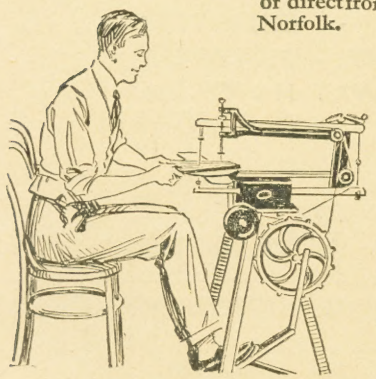
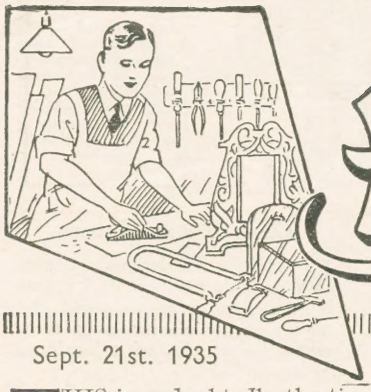
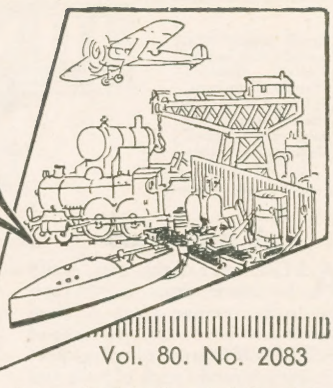


HOBBIES A1 MACHINE With Drill



Hobbies WEEKLY



Sept. 21st. 1935

Vol. 80. No. 2083

The Editor's Notes

THIS is undoubtedly the time of year when we really begin to settle down to our indoor hobbies. There is so much which has accumulated during the summer that we can surely be busy from now to Christmas. Christmas! How far off it seems. But it will come so quickly that soon we shall be saying "Why, it's only 4 weeks to Christmas." It is not a bit too early to think out what you are going to make between now and then. There is so much to do that you really must get down to it—now.

THERE will be lots of good things in these pages between now and then, of course, and you will do well to make a special note of them as they come along. I am having a special article prepared on those novel Calendar Pictures which I am sure you will find helpful.

SPECIAL for football fans next week! A novel League Table Position Board, where you put the teams in position each week and see at a glance just how they stand. You'll be delighted with it, I know. So will a great many others, so I want you to be sure of your copy by asking the newsagent to reserve it for you.

I HAVE a note from Tan Gan Choo, a League member of 140 Seang Tek Rd., Penang, S.S., saying he will send a set of Jubilee stamps, used or unused to any reader who does the same from England. That's an interesting offer to those who follow the patient hobby of stamp collecting.

MENTION of the League reminds me of a special little leaflet the Registrar has had printed giving hints and tips on running a Hobbies Club. Many readers in different towns and cities like to band themselves together and meet regularly and this leaflet is certainly helpful on the subject. It is obtainable free from either me or the Registrar of the League.

BY the way, will you be sure to add the Reply Coupon from the Cover iii of each issue with any letters you send to me which require a reply? The Coupon should bear a 1½d. stamp also. This little matter saves so much time and trouble in sorting, because, as you may imagine my postbags contain lots of other things besides your interesting letters. And as I like to get hold of them first, I can see them better with that coloured slip attached.

HERE is another thing you should remember. Owing to the exigencies (George will have to look that up in the dict., I know!) of printing and publishing it is impossible for me to put articles or replies in immediately. So many ask for them in the "next issue," whereas the preparation is often weeks in advance of the day you get it. There are all sorts of interesting technical things to do before you handle a copy, so I hope and know you will forgive what may appear to be delay or backwardness. In the words of the Cubs—We'll do our best.

THE result of the August Photographic Competition will appear in our next issue, as well as an illustration of the First Prize winner.

The Editor

CONTENTS

GIFT DESIGN CHART—Oriental Hall Rack

Next Week's Designs—Corner Cabinet and Football League Indicator

Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc. will be found on cover iii.

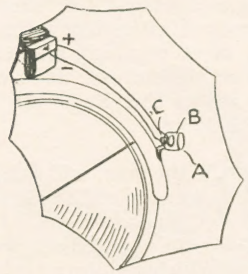
Send your own simple tips to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.

HINTS AND TIPS WORTH KNOWING

For original Tips published the sender will receive one of Hobbies Self-filling Fountain Pens. We cannot acknowledge or print all tips sent in.

A Rear Light

A LIVE rear light can easily be made from a reflector. To do so, remove glass A from case B and bore a hole the size of neck of bulb in rear of reflector C. Fix wire A round neck of bulb and



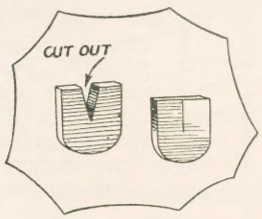
screw bulb in hole made. Push the wire A also through hole and to + terminal of battery which can be carried in saddle-bag. Solder the wire B to the end of bulb D and carry it to saddle-bag. Replace glass A and clench it in. When light is wanted on, fasten wire B to — terminal of battery.

A Carbide Tip

SOAK carbide, previous to using, in paraffin oil, and then allow it to dry before use, and it will last double the time.

Reducing Rubber Heels

IF it happens that you have a pair of rubber heels which bulge over the sides of your shoes here is how to mend them. Instead of just nailing them on to the shoes, and then cutting round the edges, cut out a V-shaped



piece as shown. When nailing them on, press the sides together to close the opening and you make a good job.

A Saw Handle

OFTEN when it happens that the handle of the family wood-saw or hand-saw gets broken, a very good substitute can be made from a broken spade handle. Cut the haft of handle off about 6ins. to 8ins. from the beginning of the shape of the D, and with a handsaw make a cut lengthways for about 6ins. This slit fits over the saw and with two bolts can be made secure for use.

To Cure Hiccups

HICCUPS can be very annoying at times and here is an effective cure. Fill the mouth with water, place the fingers in the ears, and swallow the water. Repeat this three times and the hiccups will be immediately cured.

Use of Gramophone Records

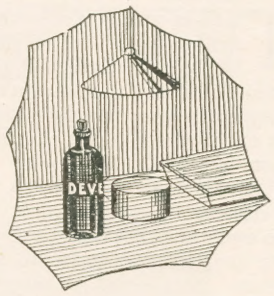
TRACE out small overlay designs for boxes (e.g., No. 1259, etc., and hands for the No. 2039 designs) on a paper and paste it on the record. Then gently bore holes wherever needed with a drill, and cut out with the Hobbies fretsaw. The dust will stick to the saw and prevent further sawing, but to clear away, hold it over a lighted candle for a few seconds, the dust will be completely burned. To remove the lines of the record piece use a fine emery paper. When finished it would be difficult to find of what material the thing has been done whilst the overlays certainly add to the beauty of the article made.

Cracked Cycle Bell

THE objectionable sound of a cracked bell may be quite easily and permanently overcome. Carefully follow the line of the crack, and at the extreme end drill a hole, then into the crack run some lead solder.

Dark Room Names

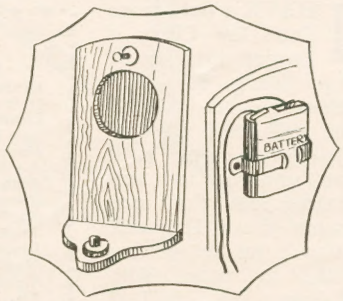
WHEN developing photographic prints in dark rooms it is a good plan to paint the names of the chemicals on their respective bottles with luminous



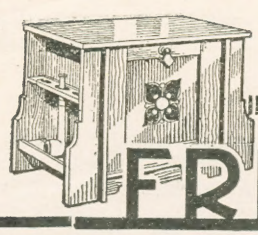
paint. This can be obtained from stationery shops or made according to the formula given in these pages.

A Watch Light

A HANDY device for the watchstand published in "Hobbies Weekly," July 13th, is a small red light on top to show up the dial of your watch at night. The best way to do this is shown in the diagram. Fasten a platform level with the bottom and fix on it a small bell-push. Then bend and fix two pieces of spring metal to the shape shown to hold the battery on the back of the

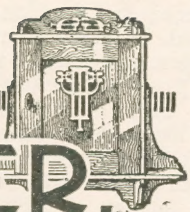


stand. Now obtain a small bulb holder, and fix this just above the hole for the watch, and then wire up from bell to battery and bell to light with another connection between light and battery.



FOR THE

FRETWORKER



THIS WEEK'S FREE DESIGN CHART

WHENEVER you see a hall which has not a Brush Rack and Mirror, think of Design No. 2083, because the opportunity arises for you to make such an article which should appeal to the householder concerned. That design sheet is a gift with this issue, but, of course, further copies can be obtained (price 4d. each) if required.

It is, by the way, always a good plan to have a duplicate of the design which is being made up, because after having cut and cleaned the various parts concerned, instructions relating to them have naturally been cleaned away. For this reason, the duplicate design comes in very useful. It shows dotted lines for the positions of adjoining pieces, and tells you exactly how to put the thing together.

The Brush Rack illustrated is a typical oriental design which would look quite striking in any hall if cut out in almost any fretwood. We should, however, recommend it to be cut in whitewood—a material which would make the mahogany coloured brush box stand out very strongly.

Ornamentation

The design, too, lends itself to various additional ornamentation. For instance, the fretted parts round the three dome portions can be backed up with some dark paper, or even tinsel paper taken from chocolates or cigarette boxes. The little piece, too, under the mirror, can be made to stand up by a suitable backing, but in this case we should not use tinsel because it would detract from the actual effect of the mirror itself.

The question of finish should be settled before the actual work is begun, and although usually it is best to stain and polish the wood, this is not advisable in the present instance. In whitewood you have a clear, almost grainless surface, which has a character of its own.

The trouble with polishing it is that that flat white surface is bound to be discoloured and occasionally a sort of dirty cream results. It is best, therefore, to leave the whitewood in its natural state.

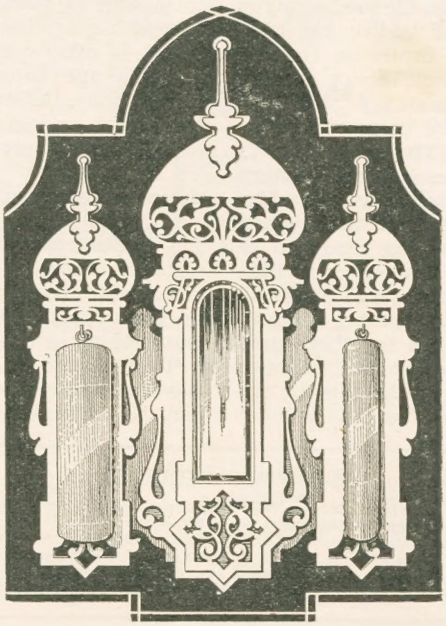
A Three-Piece Design

The actual design is in three pieces, held together by connecting parts at the back. These parts can quite well be stained down even to a jet black so the three dome pieces would stand out strong.

The whole thing can be made quite cheaply, and the parcel of wood supplied by Hobbies Ltd. with the special round top mirror and two excellent coat brushes, costs only 5/2½, or is sent by post for 5/6. The completed Rack should certainly be worth at least 7/- if nicely done, and ready customers should be found at this price.

As mentioned, the work is actually in three parts, so that even those with quite a small handframe can complete them without any trouble. Moreover, we realised that the projecting finials at the top were likely to cause a little risk of breakage during the constant turning of the work, and have, therefore, made them actually as separate pieces which can be joined on after the rest of the part has been cut out.

AN ORIENTAL BRUSH HOLDER



The shaped finial to the back is actually stood on the top of the dome, and then an overlay glued on the front to hold the two pieces together. A detail of this is shown at Fig. 1 and the various dotted lines on the pieces of pattern indicate quite clearly how the work is fitted up.

The three main parts consist of dome shaped pieces —two the same size and one larger. There is not a great deal of work in cutting the frets, but they must, of course, as usual, be undertaken carefully. Be sure to maintain an upright saw in order to get the continuity

of the curves and the same shape of design on the reverse side as on the front.

The frets, too, join on to a straight edge at the top and bottom. Be sure in cutting to keep this straight edge in line right through, because nothing looks worse than to make a ragged line when it should be straight.

The only actual fretcutting appears at the top and the bottom of each piece, and this can be undertaken before the outline of the wood is cut. It is advisable, of course, just to cut out roughly round the design, keeping about ⅜in. to ½in. away from the actual edge. This reduces the size or the wood to handle. Then cut out the interior work and finally go round the outer edge.

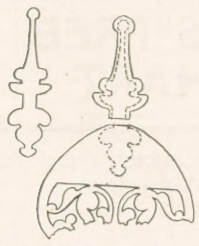


Fig. 1—How the pinnacle is joined on.

In the case of the larger piece forming the centre, a hole has to be cut to take the mirror. Have the mirror ready, and just lay it in place to ensure that it will fit into the opening to be made.

The piece which is actually cut from this back should be used to put behind the mirror when in position, and for that reason the drill hole should be made at the bottom corner on the actual cutting line. The saw will then go right round the line shown, returning to the drill hole, when the piece will fall out. Keep it to replace later when the mirror is in position.

The Mirror Holder

To hold the mirror in from the front, there is a suitable overlay cut from ⅛in. wood. In order, too, to reduce the apparent thickness of the wood of this overlay, a sloping chamfer must be cut on the interior edge. This is done with a file used straight across the grain, with the wood laid on the fretwork cutting table. Hold it firmly so the file works up and down at an angle of 45 degrees through the V opening of the table.

The three pieces are held the correct distance apart by connecting parts. These are cut to outline only, and dotted lines on the pattern indicate exactly where they are to come. The illustration at Fig. 2 shows one of them glued behind a side piece, and projecting ready to be fitted on to the centre piece. Remember in this, there is a left and right-hand piece, and to get all three parts upright and an equal distance apart.

Before joining the three pieces together, however, add the finials above the top of the dome. See that the parts fit nicely on to the edge by the joint marked A and B. Then get the smaller overlay pieces — cut from ⅛in. wood—rub on the glue thinly, and lay them in place so the top portion holds the disjointed finial and the lower piece fixes firmly on to the main piece of work. Weight or cramp the three parts together, and leave until set, to make a good joint.

Backing Material

If you propose backing up the overlay with some material, this should be done, of course, before the overlay is fitted on, but when it is glued in place, the mirror can be put in and the piece of backing board which came out, replaced behind it. It may project slightly beyond the back itself, but if so, plane the edges down to a chamfer and hold it in position by means of photo clips or a piece of strong brown paper fitted over all.

It will be noted, there are little stiffening pieces shown on the pattern sheet. These are pieces of wood 2⅛ins. long and ½in. wide, cut from 3/16in. material. They are put behind the two side pieces which hold the brushes, and act as stiffeners across the grain, to prevent the wood warping.

The bottom one is glued in place 2⅛ins. upwards, and the top comes immediately below the under fret. The upper one not only serves as a stiffener, but also provides a suitable thickness for the screw of the brush hook.

This hook is driven through centrally, and then an eyelet fixed into the ends of the brush to provide a means of hanging. Remember in both cases to start the hole with a bradawl or gimlet — otherwise the wood is apt to split. Never force a screw home with undue pressure. Turn it easily and let it bite its way through the material.

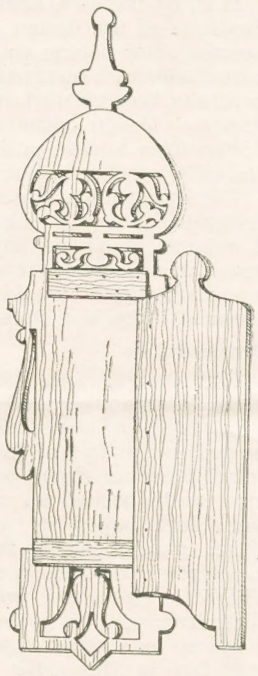


Fig. 2—The side connecting pieces.

If you have not pierced a hole before cleaning off the paper pattern remains, measure up the distance carefully with a pair of compasses or a rule. Note, too, that one is in line with the other on the opposite side, because it would make the whole thing look odd to see one brush higher.

The question of backing up the frets at the top has already been mentioned, and suitable material can be obtained easily. The very thin wood veneer supplied by Hobbies Ltd. can be cut with scissors, and is obtainable in a wide range of colours. On the other hand, thin painted card can be added.

MATERIALS REQUIRED

For making this Brush Rack we supply a parcel of whitewood of the necessary thickness, for 1/6 (post free 2/-).
The Fittings required are a bevelled-edge dome-top mirror (No. 5724) 7½d., a pair of hat and coat brushes, with hooks, (No. 6121) 3/-; bracket eyes 1d. Postage on them all is 4d.
A complete parcel of wood and fittings sent for 5/6 post free.

AN AUTOMATIC CLOTHES LINE CONTAINER

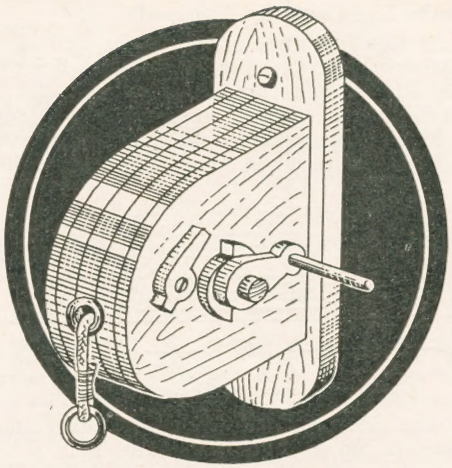


Fig. 1—The completed article.

THE novel domestic utility illustrated at Fig. 1 is certainly worthy of its simple and inexpensive construction. Not only does it supersede the old-fashioned conspicuous clothes line by its tidy and clean aspect, but it is convenient, not unsightly, and always ready for immediate use. The line cord can also be adjusted automatically to any length desired up to fifteen feet or so, which is the limit of this particular model.

Moreover, when not in use, the line is simply wound back into its neat dust proof container—and that's that.

The Container Parts

The dimensions of the various container parts is given at Figs. 2 and 3. Two side covering pieces are required, and these are cut to size and shape from ⅛in. thick birch plywood, the ¼in. spindle holes being either drilled or cut out with the fretsaw.

Fig. 3 shows the ¼in. thick central tenoned part, and this is cut out practically the same as the side parts, the exception being the 2¼in. diameter hole and the small cord outlet. In view of this, sizes have been purposely omitted to provide a clear idea of the two further ⅛in. thick parts that are cut out similar, but are without the tenon and cord outlet (see Fig. 4).

MATERIALS REQUIRED

1 piece birch plywood, 9ins. long 6ins. wide, ⅛in. thick.
1 piece birch plywood, 9ins. long 6ins. wide, ¼in. thick.
15 feet (fine) interwoven blind cord (not supplied).
1 brass mast ring (No. 16.) ½in. diameter.
2 brass cup hooks.
2 1in. by 6 brass round head screws.
1 in. by 3 brass flat head screw.
1 ¼in. eyelet (not supplied).
1 3in. length ⅜in., ½in. and ¼in. round dowel rod

The container plate is cut from ⅛in. thick wood the size and shape as given at Fig. 5, the small holes being drilled to suit two 1in. by 6 round head brass screws. Be sure to make the mortises slightly less to ensure the tenons fit strongly in place.

Assembling the Parts

The three central parts and one side piece only are assembled together with thin glue and fine fretwork nails as in Fig. 4, it being observed that the thick tenoned piece is between the other two parts. It will be found advisable to first drill tiny nail holes suitably around the flange of the latter parts to be on the safe side against splitting occurring.

When dry, remove any roughness and excess glue in the inside of the circular aperture with glasspaper and set all aside meanwhile.

Proceed by cutting out the spindle parts as given at Fig. 7. These are actual size, and should be copied or pasted down to ⅛in. thick plywood and then cut out extra carefully. The smaller hole in the handle part is best drilled to suit a piece of ⅛in. dowelling 1¼ins. long. This is inserted temporarily as a precaution against splitting when the part is cut out and the dowel glued securely in place.

Fig. 6 clearly explains how the winding spool drum is constructed. The spool drum is a piece of ¾in. dowel rod cut precisely 11/16in. long, with a ¼in. hole drilled right through it centrally for the 1⅝in. long spindle rod.

The latter is glued through the drum to project on either as shown. With an ⅛in. drill bit, bore a slanting hole right through the side of spool and then countersink same on one side by drilling ¼in. deep with a ¼in. drill for the knotted end of the line cord (see dotted lines).

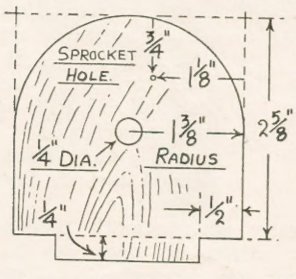


Fig. 2—The side container part.

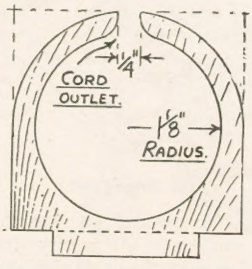


Fig. 3—The central parts.

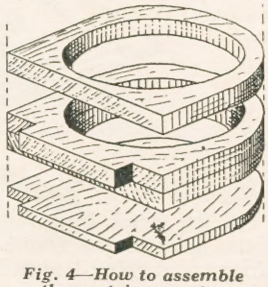


Fig. 4—How to assemble the container parts.

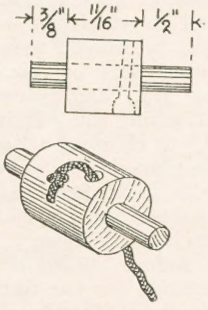


Fig. 6—The spool drum and spindle.

Clothes Line Container—(*continued*)

At this juncture, obtain about 15-feet of fine interwoven window blind cord as used for tassels. Thread one end through the spool, and having knotted same, pull it flush into the countersink.

Thread the opposite end through the container outlet and insert the spindle into its relative hole

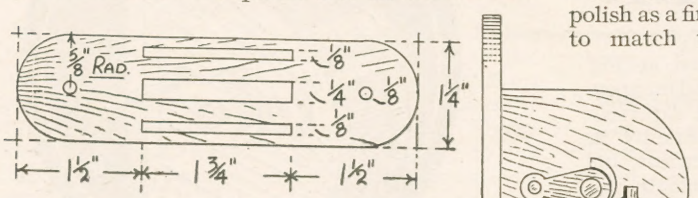


Fig. 5—The tenons in the container plate.

in the side piece, attaching the other side piece on top with glue and nails.

Before gluing the container tenons to the mortises of the plate, glasspaper the outside jointed portion of the former as neatly as possible and then do so.

The Cam Sprocket

The cam part which engages with the sprocket is glued firmly to the right-hand spindle projection, the handle being glued securely on top as shown at Figs. 1 and 8. The sprocket itself must be countersunk to suit a ¼in. by 3 flat head screw, this holding same firmly in place, but with sufficient freedom to enable it to "fall" and engage easily with the cam when the handle is turned. The small washer is attached with glue to the opposite spindle projection.

Fig. 8—A side view with the mechanism.

In order to give a neat appearance to the cord outlet, it is a good idea to remove a large eyelet from an old boot or shoe, and—after threading the line through same—insert it well in place, using glue if found necessary.

The article is best given one coat of colouring polish as a finish, rather than painting or varnishing to match the surrounding woodwork. Before doing so, however, attach a small ½in. brass ring to the line end and then wind this into the container. Complete the work by screwing the article and two cup hooks (if required) to the kitchen wall at a convenient height of eight feet or thereabouts from the floor.

For making this handy article, a parcel of birch plywood may be supplied by Hobbies Ltd., particulars and price on application.

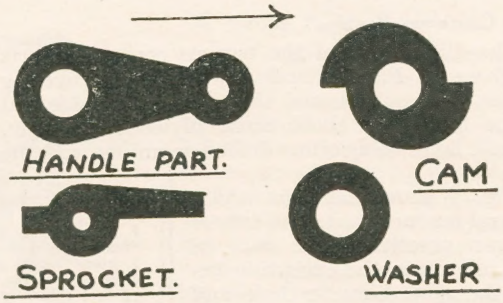


Fig. 7—Actual size of the mechanism parts.

Specimen Case—(*continued from opposite page*)

The construction of the lid is clearly shown in Fig. 3. Cut off two strips 15ins. long by 1¼ins. wide by ⅜in. thick, and two strips 9½ins. long and arrange for the halvings at the angles as shown by the enlarged diagram in Fig. 3.

Each end will be cut down to half its thickness with the tenon saw and glued and screwed together, the heads of the screws being slightly countersunk and afterwards filled with plastic wood. The rail to which the lid will be hinged measures 15ins. by 1¼ins. by ⅜in., and before attaching the lid to it, a chamfer must be planed along one edge so it fits close against the upright back of the case.

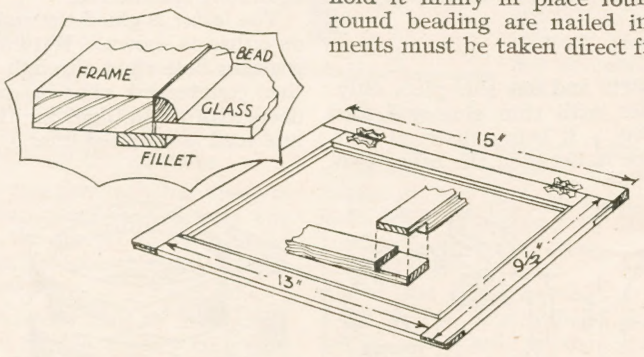


Fig. 3—The construction of the hinged lid.

Before the lid and its rail are fixed, however, provide for the fixing of the glass in the frame. To the underside of the frame and mitred round the opening, are glued four thin strips of wood ½in. wide and ⅛in. thick. A projection of 3/16in. should be allowed on each strip beyond the inner edges of the frame as shown in the upper diagram in Fig. 3, which is an enlarged sectional view through the frame and glass.

Upon the strips mentioned the glass rests, and to hold it firmly in place four lengths of quarter-round beading are nailed in. Careful measurements must be taken direct from the frame before the beading is cut off and the mitres sawn.

Also before the glass is bought take the measurement of the opening and allow ⅛in. off each way for clearance and fit. The inside of the case and lid will be left unpolished, of course, after being cleaned up with fine glasspaper.

A parcel of mahogany with smooth planed surfaces all ready for cutting to sizes can be bought from Hobbies for 4/2. Parcel No. T.M. 309 should be quoted when ordering.

A SIMPLE SPECIMEN CASE

Just the thing for the nature lover to show off the leaves, eggs or butterflies, or sea-shore shells he has collected. Hobbies Ltd. supply all necessary wood for 4/2 (postage 6d.) planed ready to use.

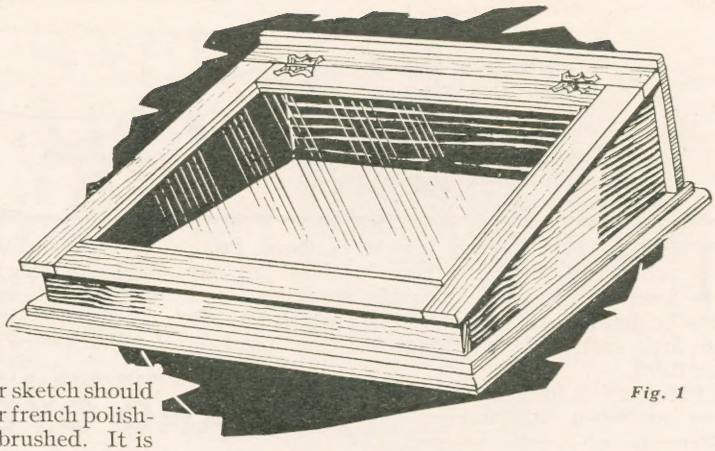


Fig. 1

THE Specimen Case shown in our sketch should be made in Mahogany and either french polished or rubbed up with wax and brushed. It is of useful size and a hinged lid gives easy access to the inside.

The base is formed of four 1½in. by ⅜in. thick strips mitred together as the lower diagram in Fig. 2 shows. There are two strips 16ins. long and two 11½ins. long. Each must have the angle of 45 degrees carefully marked at the ends and cut through with a tenon saw. Or, better still, cut the mitres direct without first marking them across by using a mitre-cutting block. One of these can be bought as cheaply as 9d. from Hobbies and it will always prove useful for other jobs such as picture framing, box making, etc.

Corner Blocks

In putting the pieces together, first lay them on a bench and see that the angles meet accurately. Then take each strip and wipe the mitres with glue and lay them again in position, testing the inside angles with a square.

The waste triangular pieces of wood cut from the ends of the strips should be glued into the corners of the frame as shown, to materially strengthen and stiffen it up.

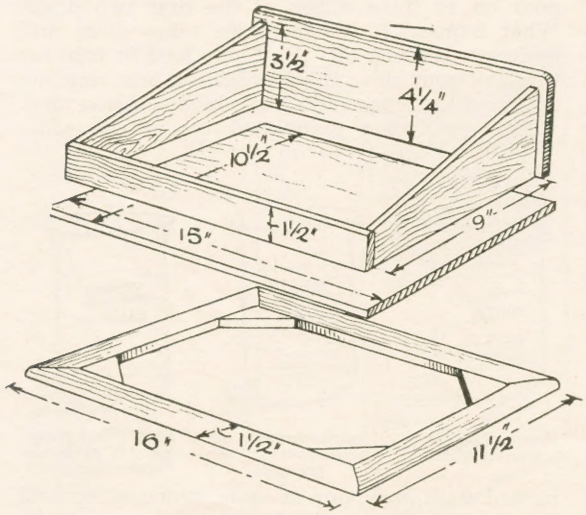


Fig. 2—The size and fitting of the parts of the base and box framework.

The top outside edges are next planed off and rounded up with rasp and glasspaper. On top of this frame is glued a floor consisting of a panel "A" of Mahogany which can be purchased planed and cut square ready for gluing down. It should be noted, however, the edges of this piece may require trimming and papering before it is glued to the frame.

The box portion of the case is shown just above the floor piece in Fig. 2. It is made up of a back measuring 15ins. by 4¼ins., two sides 9ins. by 3½ins., and a front 14ins. by 1¾ins.

Wood ¼in. thick used for all these parts. First mark out and cut the back and round off the two top corners. Then draw lines in pencil ½in. in from the ends, to indicate where the sides come.

The Sides

Set out one side, the taper being from 3½ins. at the top end to 1¾ins. at the front. Cut it along with the fretsaw or tenon saw and smooth up the edges. Afterwards lay it on the other side piece of mahogany, mark round and cut it out. The two sides should thus be exactly alike.

The front is a plain piece, and after it is fixed by glue and screws to the sides, the top edge is planed off to the same angle as the sides so the lid will rest evenly all along the front.

Construction

All the parts are screwed together and further to strengthen the corners, pieces of angle fillet should be glued in. Next glue and screw the case to the floor putting some long slender screws up through the base into the sides, back and front.

(*Continued on opposite page*)

CUTTING LIST

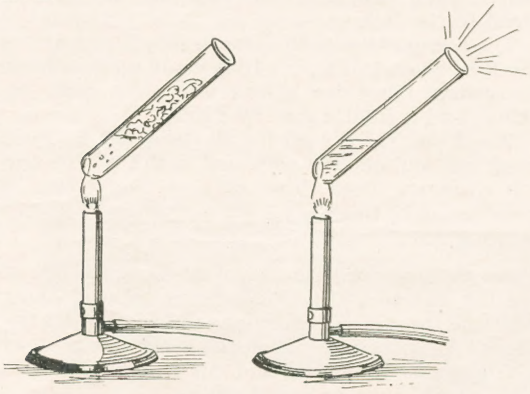
MAHOGANY

1 Piece 16ins. by 3ins. by ⅜in. (Base).
1 Piece 11½ins. by 3ins. by ⅜in. (Base).
1 Panel "A" (15ins. by 10½ins.) ¼in. (Floor).
2 Pieces 9ins. by 4ins. by ¼in. (Sides).
1 Piece 15ins. by 4¼ins. by ¼in. (Back).
1 Piece 15ins. by 2ins. by ¼in. (Front).
1 Piece 15ins. by 4ins. by ⅜in. (Lid and rail).
1 Piece 10ins. by 2½ins. by ⅜in. (Lid and rail).
1 Piece 15ins. by 2½ins. by ½in. (Fillets).
4ft. of quarter-round Beading No. 34. ¼in.
1 Pair No. 5308 Hinges (1in.).

FATS AND DYES

THERE is a certain mystery about fatty substances, in fact, there is about all our food in general. Roughly speaking, food may be divided into three classes, of which fats are the first, carbohydrates the second, and proteids the third.

Fat itself is formed of carbon, hydrogen, and oxygen. There are, of course, several kinds of fat. Mutton fat or beef fat is stearate of glyceryl, whilst olive oil is oleate of glyceryl. Plants and seeds also contain quite an appreciable proportion of fat, but this particular kind differs from animal fat in that it contains a good deal more of the substance called olein.



Butter boils quietly and produces foam, but margarine crackles and has none, as shown.

Soap is (or should be !) a familiar commodity, and it is a simple but interesting experiment to produce a little in the following manner. Pour some sodium hydroxide into a large test tube and heat it to boiling point, then drop a small piece of beef fat into it.

The fat will divide into small particles and remain suspended ; this is called an emulsion. Continue to boil, and the fat will become decomposed into the three fatty acids which form it. These acids unite with the sodium of your original hydroxide and soap is produced.

Making Soap

In a nutshell, soap is formed by boiling up fat with potash or soda, when stearate of potassium or of sodium is produced.

If you wish to make curd soap, just add salt to the liquid mass, and a curdy precipitate results.

Milk, butter, and cheese can hardly be called chemical substances, yet milk consists of minute drops of fat suspended in a solution which has acid properties. Butter is really the fat separated from milk by churning, and here's a wrinkle worth knowing—how to test a sample to prove whether it is really butter or only margarine.

That's very simple, for all you do is to place the sample in a test tube and heat it over your Bunsen. If it is butter it will boil quietly and foam will be produced. But if it is margarine you will get a series of loud crackles and practically no foam.

The subject of fats and oils automatically causes one's thoughts to veer round to the question of solubility. Everyone knows that oil and water won't mix, which raises the further interesting question of why some substances will dissolve, while others will not.

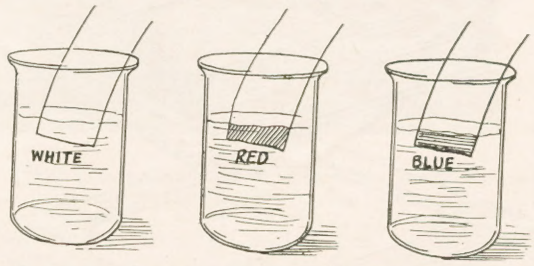
Water, in spite of its gentle character, has the remarkable power of being able to dissolve more substances than any other liquid. But when it comes to metals, well, water is useless, unless you stretch a point and say that a piece of iron left in a pool of water for a hundred years or so will eventually dissolve. In any case, that would be an incorrect statement.

To Dissolve Metals

If you wish to dissolve metals you have to resort to your old friends, the acids. That most familiar trio, sulphuric, hydrochloric, and nitric, will dissolve practically all the metals you are likely to handle.

Put a few grains of zinc into a test tube, and pour on to them either of the first two acids. What happens ? Effervesence takes place and hydrogen is given off. You may look in vain for traces of your zinc ; this has become zinc sulphate or zinc chloride, according to which acid you used.

Now put some granulated tin into a wide-necked flask and pour in some strong nitric acid that has been warmed. Dense red fumes will be given off, and your tin will remain only in the



From chloride of iron in water. *Sulphocyanide of potassium in water for red.* *Blue from ferrocyanide of potassium in water.*

form of an oxide. Or if you pour the acid on to magnesium, hydrogen will be produced; use copper, and you get nitric oxide.

In all these cases you can say that your metal has been dissolved, no matter whether any violent chemical action takes place or not.

By the way, here is a teaser that you can try on your learned pals. Ask them to make a list of the liquids which will dissolve gold, the king of metals. The results should prove interesting, because there is only one known solvent for gold, and that is a mixture of nitric and hydrochloric acids, christened by the ancients as *aqua regia*.

Melting Metal

Now, in the face of all these known facts about solvents, even your chemistry master could not, perhaps, name a metal which melts in boiling water. So here's where you can score.

Obtain small supplies of bismuth, lead, and tin. Melt 2½ parts (by weight) of the lead in an old iron pot over a fire, add 1½ parts of tin, and finally add, very gradually by small pieces, 4 parts of bismuth. This forms into a solid mass, which is the metal you are seeking.

Put a piece of it into a receptacle of water, boil the water, and the metal will melt so long as the water is kept at boiling point.

And if you want to have some fun with a chum—and can afford it—fashion a spoon or a rod from this metal, and ask him to stir a saucepan of boiling water over a gas ring. His astonishment, when the spoon melts in his hand, is well worth the trouble of making it.

Now let's change the subject for a moment and deal with that interesting topic of dyes and dyeing. The amateur chemist can learn sufficient about this to carry out dyeing operations in a small way, quite apart from the fascination of the experiments.

If you propose dyeing something fairly important it is only common sense to cleanse the article beforehand. This can be done quite satisfactorily by washing, but your biggest interest will be in the making up of the dyes themselves. Well, here are, briefly, the facts and formulæ that you will want to know.

To make red dye, simply prepare a strong solution of alum and logwood in boiling water. Let it cool, and articles dipped in this liquid will be dyed red.

To dye yellow, make a solution of lead acetate and immerse a piece of white material in it. Have another vessel containing a solution of potassium bichromate, and dip the soaked material in this. You can control the depth of the yellow colour by the amount of potassium bichromate that you use.

A very attractive green colour results when a piece of cloth is first dipped into a solution of cobalt chloride, taken out and wrung dry, then dipped in a solution of sodium ferrocyanide.

A Home Dye Works

And if you want to fix up a small dye works on your own, take three glass jars of water and into the first dissolve a little chloride of iron, into the second a little sulphocyanide of potassium, and into the third a small amount of ferrocyanide of potassium.

Take a piece of clean white cloth and dip it into the first glass. It will not change its colour, but take it out and wring it, then immerse it in the second glass. It will now take on a red colour, and if you take it out of this and put it into the third solution, the cloth will end up by becoming dark blue.

A "RADIO TIMES" HOLDER

READERS are often asking for suggestions how to make money with their fretsaws. Why not try a "Radio Times" Holder as shown here. The reader who suggested it has made a dozen and sold them at 1/6 quite easily.

The illustration is of a simple and appropriate holder for the weekly Radio Times to hang near the Radio. It was made by one of our readers, H. Abrahams of Widnes who sent the following details. Wood 3/16in. thick is used with a back 13ins. by 11ins. and a front 9ins. by 11ins. The two pieces are held apart by stripwood 9ins. long, 1in. wide and ¼in. thick.

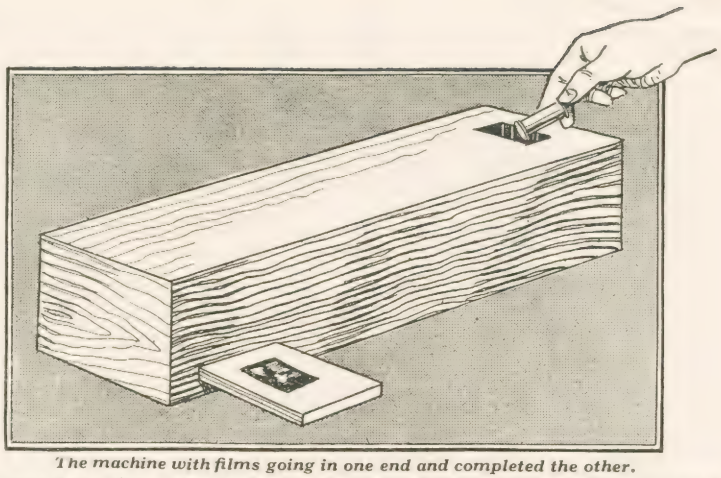
The strips were fastened to the shortest sides of the Holder with small pins, and then a piece of stripwood 11ins. long nailed on to its edge at the bottom to provide the floor. To add a little ornamentation, a length of Hobbies half round beading is cut into 1½in. pieces and glued to each corner, whilst the wording "Radio Times" can be traced from a page of that periodical and pasted on to a piece of ⅛in. wood, to be cut out with a fretsaw.

The Hobbies Design No. 2040 of the "Royal Wedding Photo Frame" provided the design for the Coat of Arms. Cut this out in ⅛in. whitewood and glue it to the front between the wording.

The whole of the work can be stained and the letters and Coat of Arms picked out in gold or some bright paint to make them stand out.

Back, 1 piece wood 13ins. by 11ins.
Front, 1 piece wood 9ins. by 11ins.
Bottom and Sides, Stripwood 30ins. by 1in. by ¼in.
1 length Hobbies ¼in. Ball beading 1ft. 6ins.

AUTOMATIC DEVELOPER FOR FILMS



The machine with films going in one end and completed the other.

MANY people do not develop their own photographs because of the bother of having to make or fit up a dark room. Such readers will be interested in the automatic photographic developing machine described in this article.

This machine, shown complete here not only develops and fixes the negative film automatically but also prints the self-toning papers. It is designed to develop No. 2 Brownie snapshots and anyone can make it who has a few ordinary carpentry tools.

First of all make a plain four-sided box with a partition A in the centre, as shown in Fig. 1. Then cut out the five pieces of wood A, B, C, D and E as shown in Fig. 2. Get a length of strong thin wire and thread it through the holes in C and D (see sketch) and fix the two clips in the positions shown. A detail sketch of one of the clips is given in Fig. 3.

Fix the five pieces of wood together so they form a tray (see Fig. 4) and next obtain a piece of ground glass or fine quality frosted glass 31¾ins. by 3¾ins.

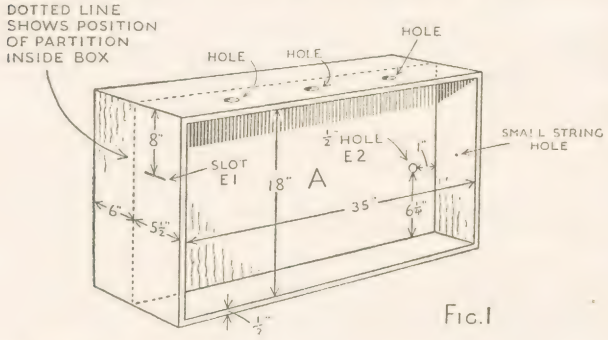


FIG. 1

and fix it to the bottom of the tray by means of angle brackets as shown in Fig. 5.

The tray may be made watertight by sticking putty between where the wood and the glass meet and in any leaky crevices.

Cut out a piece of tin and bend it along the dotted lines (Fig. 6), solder two short pieces of spring to it (Fig. 7) and fix the springs with screws to the shallow end of the tray. (See X2 Fig. 4). A space of about ⅛in. should separate the tin from the edge of the tray and the tin should also incline downward at an angle of 35°.

Now make a long narrow box with three compartments A, B, and C and three outlet pipes, one for each compartment, as shown in Fig. 10. That done, make two wooden trays one 35ins. long, by 3in. wide and 2¼ins. deep and the other 34ins. long by 3ins. wide and ¾in. deep. Make a hole in the bottom of the smaller tray at one end and fix to it a rubber outlet pipe. Then fix both trays inside the casing as shown in Fig. 15. The tray with the rubber pipe is marked G and the other one M.

In the same sketch the glass-bottomed tray, which should also be fixed inside the casing, is marked J and the box with the three compartments is marked E. The part marked K is a mirror which should be fixed at an angle to reflect light on the glass bottom of J.

Get a piece of heavy wood 30½ins. long by slightly less than 3ins. wide and cover one side of it with strong brown paper, using small tacks to hold the paper in position. Then treat the brown paper as described in Fig. 16. This heavy piece of wood is marked

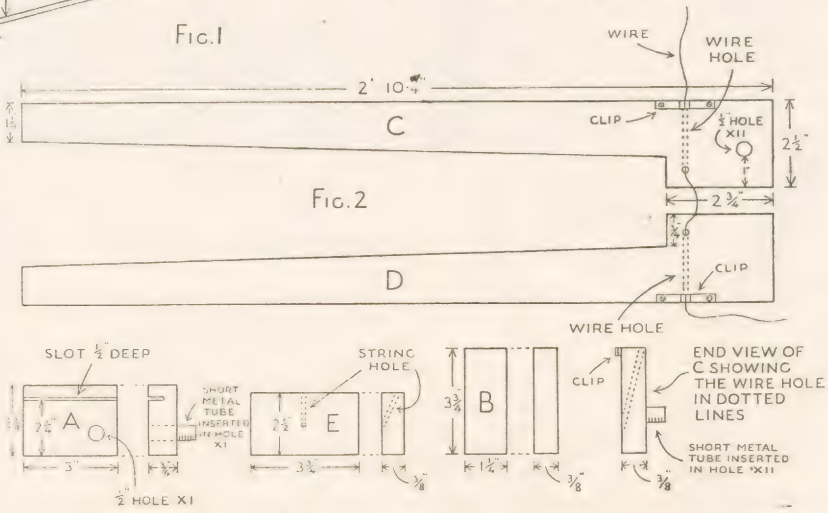


FIG. 2

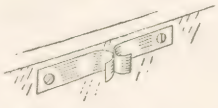


FIG. 3. DETAIL SKETCH OF ONE OF THE CLIPS IT IS MADE BY BENDING TWO SHORT PIECES OF SPRING AS SHOWN AND FIXING THEM TO THE SIDE OF THE TRAY

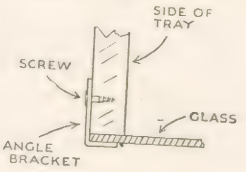


FIG. 5 SHOWING METHOD OF FIXING THE ANGLE BRACKETS.

DETAIL SKETCH OF ONE OF THE SPRINGS

FIG. 4. SKETCH OF THE COMPLETED TRAY.

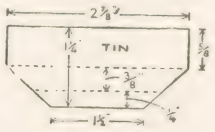


FIG. 6

END VIEW OF TIN SHOWING HOW IT SHOULD BE BENT.

Fig. 7

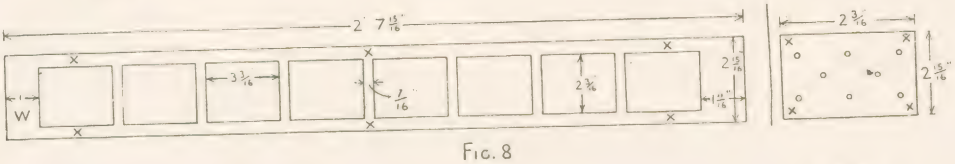


FIG. 8

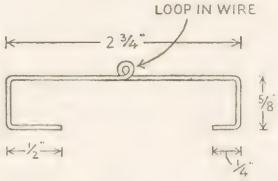
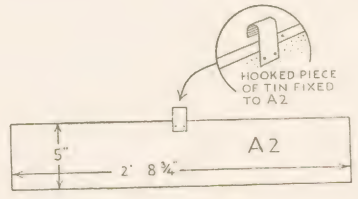


FIG. 9.

These diagrams are exceedingly helpful and should be read in conjunction with the description in the article.



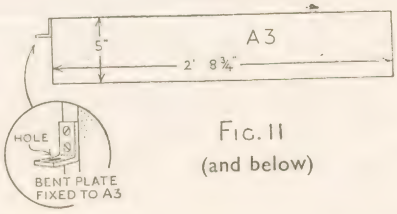


FIG. 11 (and below)

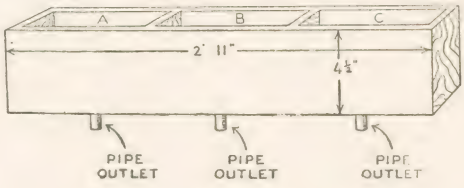
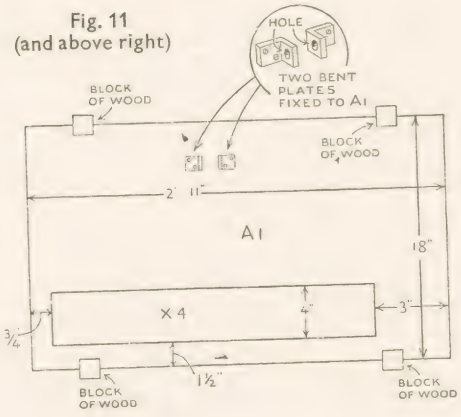


FIG. 10

Fig. 11 (and above right)



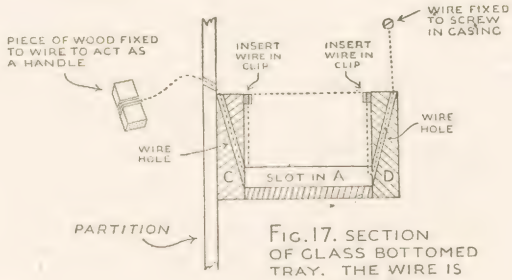


FIG. 17. SECTION OF GLASS BOTTOMED TRAY. THE WIRE IS INDICATED BY DOTTED LINE

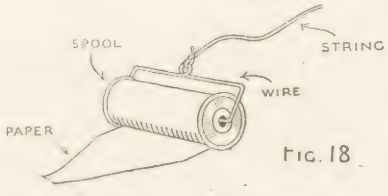


FIG. 18

I in Fig. 15 and has two staples (O and R) attached to it (the side with the brown paper attached being underneath).

On the underside of G are fixed two staples (Y and P) and another two staples (X and S) are fixed to the partition. The letter H marks the position of a hole in the partition which has a loose wooden pin inserted through it (See Fig. 19).

A cord tied to O (Fig. 15) is threaded through Y and X, wound several times (not tightly) round the loose pin at H and again threaded through S and P before it is tied to R. In this way I is held suspended over J in such a way that if it were to fall it would go inside J.

As shown, a cork has been inserted into each of the outlet pipes leading from E (the corks should be inserted so they will come out with only a slight pull) and each cork has a cord attached to it which passes round a pulley in the bottom of G and thence through a hole F. A cork has also been inserted in the outlet pipe leading from J and the cord attached to it passes through the hole L.

THE BENT PIECE OF TIN ATTACHED TO A2 HOOKS ON TO A PIN INSERTED THROUGH THE HOLES IN THE TWO BENT PLATES ATTACHED TO A1

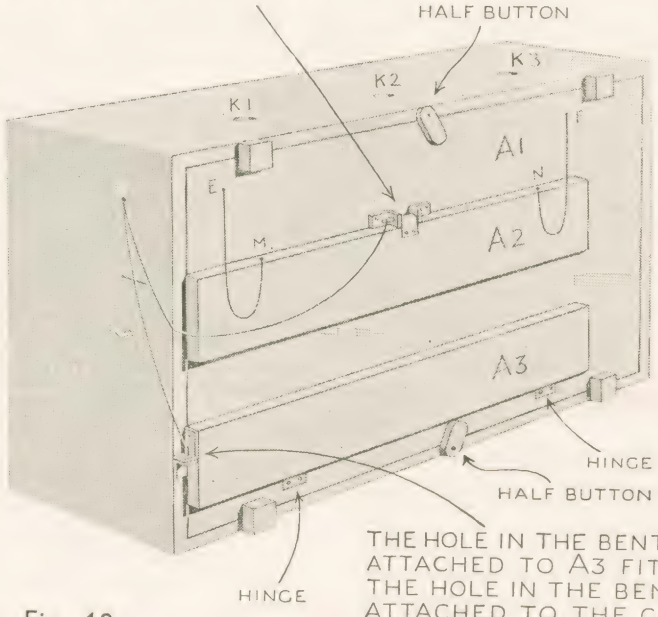


Fig. 12

THE HOLE IN THE BENT PLATE ATTACHED TO A3 FITS OVER THE HOLE IN THE BENT PLATE ATTACHED TO THE CASING & A PIN IS INSERTED THROUGH BOTH HOLES

One end of the wire attached to the glass bottomed tray (Fig. 4) should be fixed to a screw, and the other end led through a hole in the partition and a handle attached to it (Fig. 17).

Cut out the two pieces of wood, shown in Fig. 8, and also cut out ten 5/16in. squares from $\frac{1}{8}$in. ply and fix one in each position marked X in the sketch. Paint both pieces of wood with black enamel and lay them with the studs down inside the glass bottomed tray.

The long one should rest on the glass with the end W at the shallow end of the tray and the smaller one should rest on the piece of wood A (see Fig. 4).

To make a cover to fit over the front of the machine cut out the three pieces of wood A1, A2, A3 (see both Figs. 11) and fix the bent plates, blocks of wood etc., in the positions indicated. A3 should be fixed by hinges to A1 as shown in Fig. 13 and A2 should simply be attached to A1 by means of two loose cords EM and NF.

How it Works

A view of the back of the machine is given in Fig. 14.

The parts lettered R2, R3, R4, R5, R6, R7, R8 and R9 are pulleys fixed to the roof of the casing, whilst E, S, Q, R, T, V, U and W are empty tin cans ; all of which, except E, are attached to M by means of hooks and eyes.

They are all made to leak, some slowly and others more quickly.

For instance, E must empty in 11 minutes ; S in $7\frac{1}{2}$ minutes ; R in 9 minutes ; T in 13 minutes ; Q in $33\frac{1}{3}$ minutes ; V in 35 minutes ; U in 8 hours 35 minutes and W from 9 to 10 hours. The letters H, F, I, and Z are holes in the wood and K, D, I, J, O, B and C are weights.

A piece of wood (X) is fixed in position so the bottom of the casing forms a watertight tray. The rubber pipe is attached to the hole XII in the glass-bottomed tray which is on the other side of the partition (see Fig. 2). Notice carefully the cords which connect the cans, the pulleys, the weights and the holes, etc

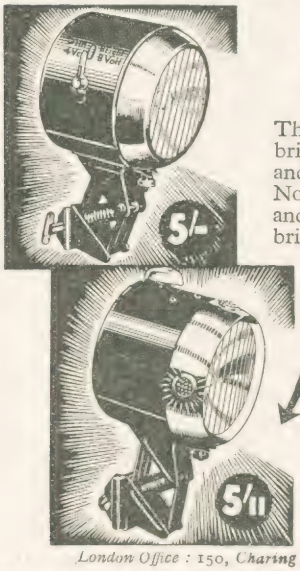
Returning to Fig. 15, the cords which are attached to the corks in the three outlet pipes in E are the same cords as the ones that emerge from F_4 (Fig. 14) and are connected with the weights I, J and O.

The cord which leads from A12 to H (Fig. 14) passes round a pulley (Fig. 19) and is attached to a wooden pin inserted in a hole in the partition at the position marked H. (Fig. 15).

In Fig. 12 the cord which emerges from the hole Z and is connected with the pin supporting A2, is the same cord as the one that passes through Z (Fig. 14) and is attached to C. Likewise in Fig. 12 the other cord which emerges from Z and is connected with the pin which holds A3 closed, is the same cord as the one that passes through Z (Fig. 14) and is attached to B.

(*To be Continued*)

Miles Safer!
Miles Brighter!
Miles Better!



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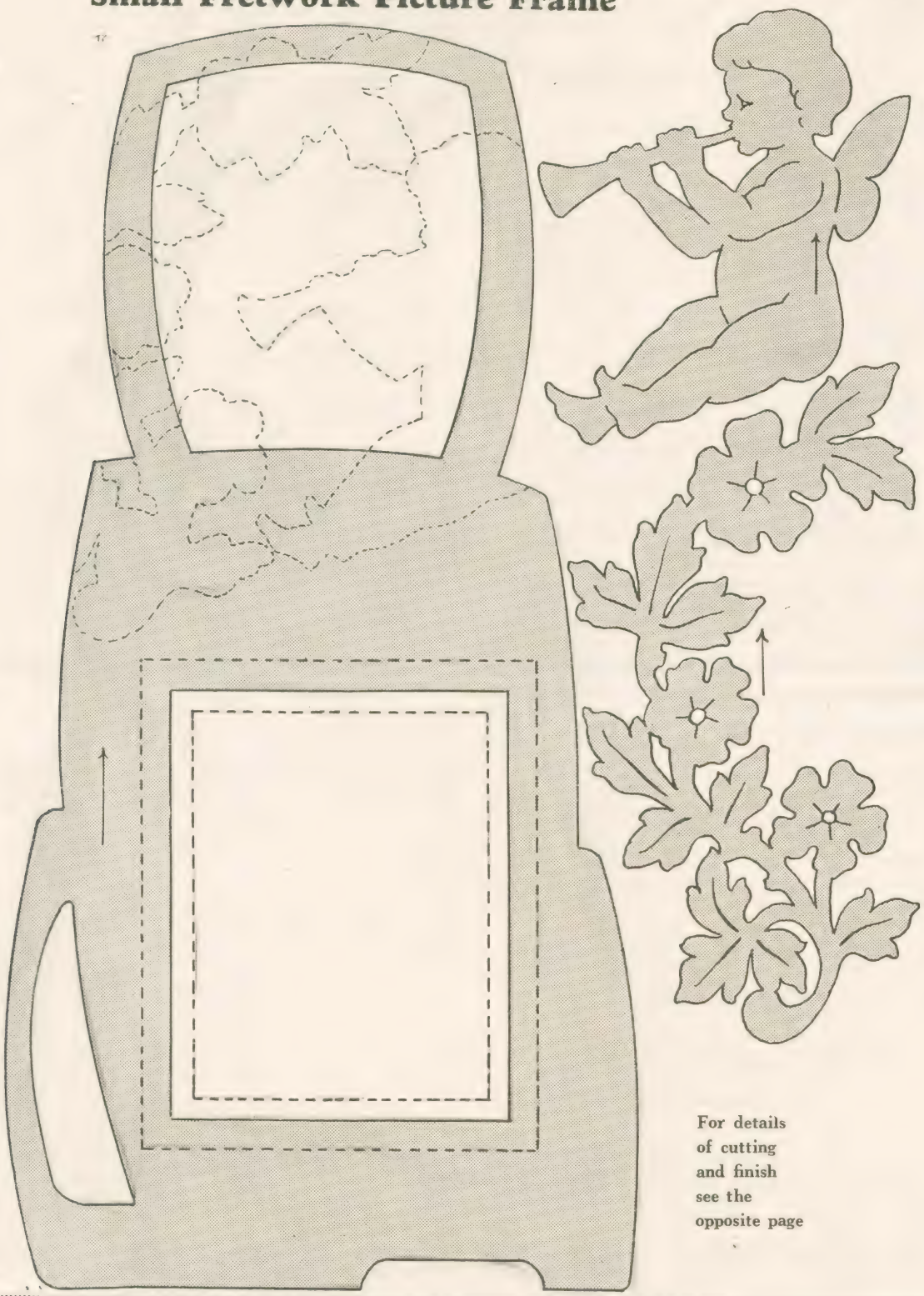
ALL WITH ONE BLADE!

Mr. E. V. Hughes, Co. Armagh, writes:—"I have just completed the model of the Lord Mayor's Coach, a smoker's table, model altar, pipe rack, model aeroplane, letter rack and the "Home Shrine"—all with one blade, which is still intact. I think this is a pretty good record for a beginner."

HOBBIES BRITISH FRETSAWS

Small Fretwork Picture Frame



For details of cutting and finish see the opposite page

FRETWORK FRAME FOR A HOLIDAY SNAP

THE patterns shown on opposite page are for making a simple little fretwork picture frame suitable for holding one of those holiday snaps which came out so well. The space available is 2ins. wide and 2⅝ins. high, which will take any normal photograph.

The illustration here shows the finished piece of work which is cut out from any ordinary fretwood. The main back which contains the actual photograph, is cut from 3/16in. wood and should preferably be of some dark material. The overlays—comprising the flower pattern and the heraldic figure—are cut from ⅛in. material which would look best in a white wood or something to contrast sharply with the background.

Outstanding Overlays

These overlays do not entirely lie on the back, but overlap the edges in a manner which makes the frame all the more striking. A piece of glass is supplied by Hobbies Ltd., the size required for the opening shown, and it is held in place by a narrow rim of wood also cut in ⅛in. material.

There is no pattern shown for this rim, but it can be easily marked off from the two sets of dotted lines on the design of the back. The outer edge of the rim is 2½ins. wide and 3ins. high, whilst the inner edge is 1⅞ins. wide and 2⅜ins. high.

When cut, this rim is glued in place so it overlaps the hole in the back equally all round. Then put in the glass, followed by the picture and the piece of backing. This backing can be either a piece of thin wood or cardboard, or thin folded blotting paper. The whole lot is held in place by gluing brown paper over the back strongly.

So far as the overlays are concerned, a good idea is to cut them out in ivorine or xylonite, or some of the other fancy materials like celluloid. The cutting can be done with a metal fretsaw blade, and care must be taken not to break off any of the delicate parts projecting in and around the patterns.

Clean up the work when finished, and then glue the two overlays on in the position indicated by the dotted lines. These lines, of course, will not be seen after the wood has been cleaned up, but some idea of their position should be made before the glasspapering is undertaken. A pin hole can easily be pricked through the pattern into the back so it will be seen after cleaning.

In gluing these pieces down, just keep the adhesive thin on the back and only apply it where the overlays will actually lie. Rub it over the surface with the tip of the finger, rather than put it on with a brush. Remember, it is not the amount of glue which you put on, but rather how much it is rubbed into the grain of the wood to provide a thin film which makes the grip on to the adjoining material.

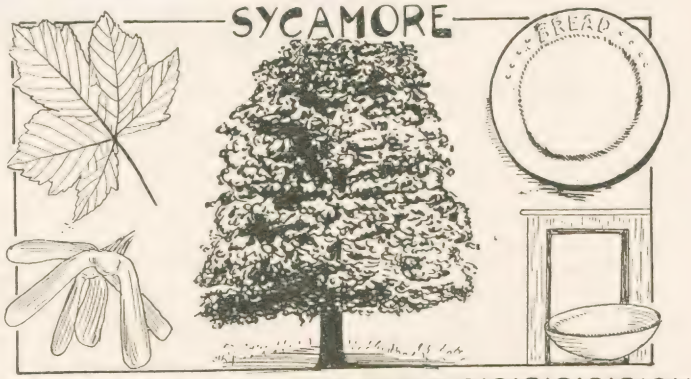
As shown on the pattern, the top of the back is open, but a suitable and striking background can be formed by pasting a piece of material over this opening. Cut it to the shape of the outside edge of the work, and glue it tightly across the aperture. This material can be coloured linen or fancy paper such as wrapped round chocolates or even a good small pattern wallpaper.

The photograph frame, of course, is really made to stand, and the easiest way to do this is to fix on one of Hobbies simple wire struts behind it. The No. 6186 is a suitable size. It is fixed with four short screws just the right height to allow the frame to slope backwards.

To get this measurement right, shut the strut down and get the lower edge level with the bottom.

OUR TREES AND THEIR USES

EVERYONE knows the seeds of the sycamore, those double "keyed" winged things which twirl in the air in winter. It is a beautiful tree with very thick, heavy foliage, and the tough timber is used for mangle rollers, wooden cups and bowls, butter pats, etc. Many furniture manufacturers use the wood in a raw state for cabinets and cupboards. It takes stain easily, producing a beautifully grained surface.



Taper Boilers

"WHY is an elephant when it swims?" There is no need to be caught out when anyone asks you that question! For the sure answer is, "Because the bigger the splasher!" Likewise, there is a very precise answer to the question of "Why is a boiler when it tapers?" It is, simply, "Because the sloper the steamer!"

And now we're going to see why!

Many readers will have noticed that all new L.M.S. engines have boilers which are smaller in diameter at the front than at the rear—tapered, or coned, boilers. This development is not surprising, since the present Chief Mechanical Engineer of the L.M.S.R., Mr. W. A. Stanier, is an ex Great Western man, and the taper boiler has long been law on the G.W.R.

With more enthusiasm than knowledge, a small boy once suggested to the writer of these notes that the point of a taper boiler lay in the fact that it "saved metal." This, however, is absurd. A taper boiler may be smaller at the front than a parallel-sided one, but it is correspondingly larger at the rear, so that the amount of material used in its make-up remains unchanged.

No, here is the real advantage. The greatest heat in every locomotive is generated at the rear of the boiler, which is the fire-box end, and the greater the proportion of boiler-water which can be accumulated at the fire-box end, the greater becomes the evaporative, or steaming, capacity of the engine. It is just this greater steaming capacity that the taper boiler achieves.

Among the lesser advantages of the taper boiler may be mentioned the lengthened chimney, made possible by the lower line of the smokebox. This gives the smoke and steam a chance to rise clear of the eddy currents set up by the boiler in motion, which make a strong bid to draw the smoke cloud down in front of the cab windows. It is largely this which enables the G.W.R. to dispense with smoke-deflecting side screens.

It is unfortunate that taper boilers usually make for ugliness. If, however, we were to complain to Mr. Stanier about the ugly top-line of his 4-6-0 engine "Silver Jubilee," he would probably tell us that he designs his locomotives as instruments of utility, and not as ornaments!

Farewell!

WITH the close of the summer season, the well-known Lynton & Barnstaple Railway, the little 1ft. 11½in. gauge line controlled by the Southern, is to cease running. When Lynton and Lynmouth sent a delegation to the S.R. at Barnstaple, to urge the continuance of the railway, it was rather tactless of all but one of the delegates to travel by motor car?

Congratulations!

ON August 31st the Great Western Railway became 100 years old. Its Centenary year programme has been the most ambitious in its history, with 15 expresses covering 1,362 miles at average speeds of 60 to 71.3 m.p.h. on week-days. The "Cheltenham Flyer" recently covered 17½ miles at an average speed of 96 m.p.h., with 4-6-0 No. 5037, "Monmouth Castle," busy making up 5 mins. late start from Swindon. The fame of the "Flyer" may shortly be overshadowed by speed developments on foot.

[*Photo by courtesy L.M.S.*

The L.M.S. Railway taper-boilered Express engine "Silver Jubilee"

A Word in Apology

SOME readers may have been led astray by the unfortunate misprint which occurred in our notes of July 20th, and on this account some apology is due. The speed-test formula for model trains should have read $S=\frac{240}{T}$ and not $S=240T$.

Wheel Spin Cure

DO any of your model engines fall short of their full power at starting, through wheel-slipping? Electric models are sometimes so light, in proportion to their power, that they actually jump the rails at starting. It is just this trouble that we are going to cure in our next notes!

Tender Topics

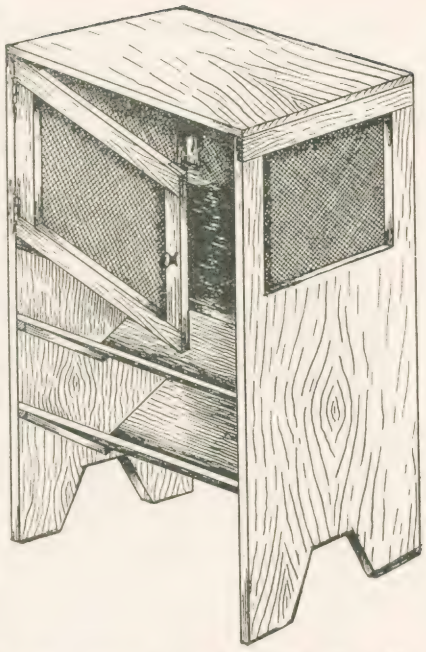
MODEL-MAKING firms give far too little attention to the matter of coal bunkers in tenders. Very often coal and bunker are completely ignored, and an ugly flat top to the tender is allowed to appear. This is surely worth remedying.

The difficulty is overcome by gluing into position two pieces of cardboard, painted black, and rounded off at the tops, to represent the fore and aft walls of the coal bunker. A look at the tender of the "Silver Jubilee," in the illustration, will show the style. The bunker space so formed is best filled with real coal, or rather slack, put through a sieve of appropriate mesh. A little dexterious handling of a tube of glue will bind the small pieces of coal to one another and to the sides of the bunker, so a spill is averted in the event of a derailment.

The coal should be piled high above the sides of the tender, as on the real railways. Practice has shown that this realistic addition to the tender transforms the appearance of a model engine.

High Pressure.

A MEAT SAFE & VEGETABLE HOLDER



THE accompanying illustration indicates a most useful article in the form of a combined meat safe and vegetable stand. The sides for the stand are made in wood ¾in. thick and cut to the details indicated in Fig. 1.

First cut the wood 4ft. long by 17ins. wide, and then cut the shape in the bottom edge to form the feet for the stand. Take 3ins. from each bottom corner as shown, and then measure 6ins. up and 6ins. from each side and mark off the tapered lines which will give the shape of the piece to be cut out. Cut the opening in the top end by first marking 2ins. on each side and 15ins. down as shown, and then cut the ends half lap 2ins. by ⅜in. as shown by the side view in Fig. 1.

Mark Positions

Now mark a centre line up the wood, and then mark off the positions for the vegetable stand shelves and the bottom of the meat safe. These positions are all clearly indicated by the dotted lines in Fig. 1 and the measurements indicate the top surface of the safe bottom, and the slanting lines the top surface of the battens for the shelves.

Continue with the sides by cutting two pieces of wood 2ins. by ¾in. by 17ins. long, and half lap the ends 2ins. by ⅜in. and then fix them in position on the ends of the sides.

Now cut two pieces of fine mesh zinc gauze 14ins. square, and tack them over the opening thus formed in the sides as shown in Fig. 2. Fix pieces of 1in. by 1in. stripwood in positions already marked on the inner faces of each side (see Fig. 2) and a piece along the same face for the bottom of the meat safe.

Next we can cut a piece of wood ½in. thick, 1ft. 10ins. long by 17ins. for the bottom of the safe, and this is then fixed in place on the battens between the two sides. Continue to build up the article by cutting the shelves for the vegetables from ½in. wood 1ft. 10ins. long, and fix them in position on the battens.

The Top and Door

The top is made in ½in. wood 2ft. 2ins. by 17ins., fixed in position with a few nails.

Make two frames from wood ¾in. thick to the size indicated in Fig. 3, one being required for the door of the safe and one for the back. Half lap the ends of the pieces for the frame as shown, to add to the strength. The frame for the back of the safe should be made a good fit in the opening, and after fixing a piece of zinc gauze the whole thing is placed in position and fixed with nails or small screws.

The door frame is likewise covered with zinc gauze on the inner side and hinged in position on the front of the safe by means of two small hinges. A small catch and knob are fixed on the safe door, and the whole thing is painted or stained as desired.

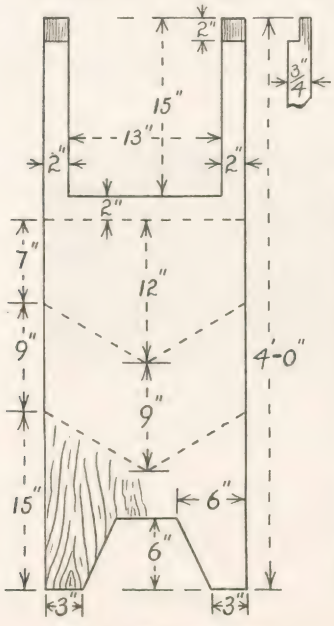


Fig. 1.—The side details

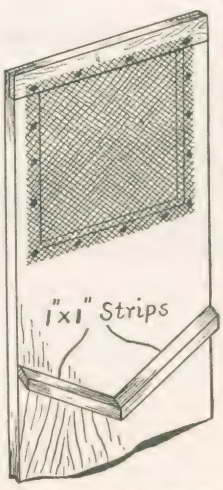


Fig. 2.—The mesh wire and a shelf support

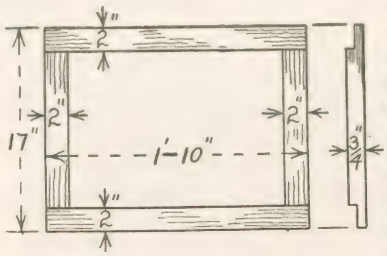
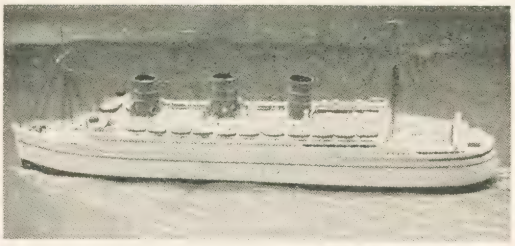


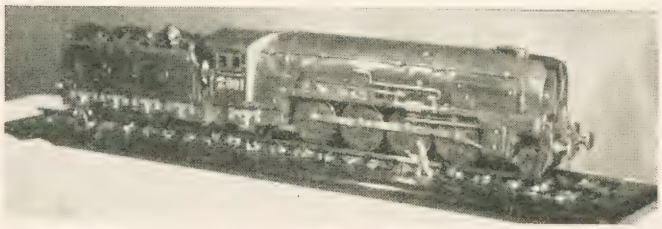
Fig. 3.—Details of the door frame

READERS' SNAPS



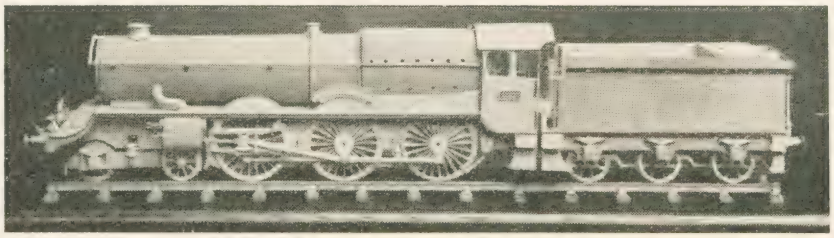
THIS " Empress of Britain " has nearly 2,000 windows, doors and portholes, and is correct even to the tiny 1/16in. wide ladders running up the funnel. Stairs between decks were made of matchbox wood, and the whole thing took up evenings for about five months to complete. It is 30ins. long and driven by a Hobbies marine engine unit. This splendid model was the first attempt at shipbuilding made by W. E. Canning of Peckham Rye, London, who has made a wonderful job although not a mechanic by profession.

LOOK at the fine model of the wonderful Dornier Flying Boat D.O.X. It looks the *real* thing, doesn't it? This is one of many models made by James McClintock of Belfast, amongst which are the Moth Aeroplane, the Schneider Record Plane and Frank Hawk's Sky Chief.

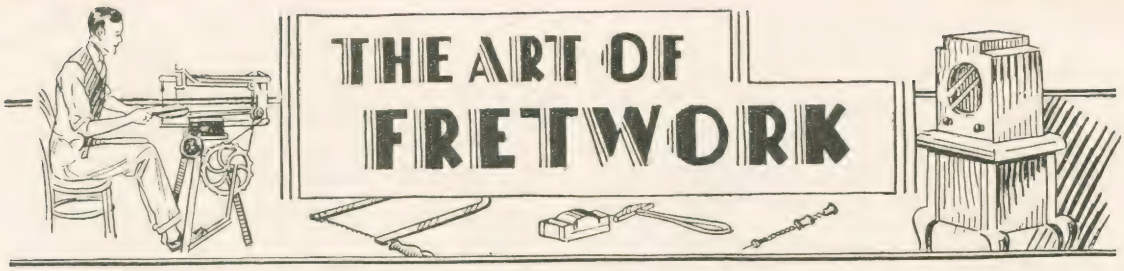


THE realistic locomotive on the left was made from Design No. 193 Special by Edwin Knight, of Dundee. It is cut from copper or wood covered with copper, with the fittings in brass. The tender has coal in it, the fireman is leaning out of his cab, and a proper permanent way has been added for further realism. There are about 230 screwnails in the model.

THE picture below is the England-Australia air race winner, made by Jas. McClintock and mentioned above. The wing space is 2ft. and the machine is fitted with a landing light operated from a switch in the cockpit.



THE locomotive is the G.W.R. King George V and is built to scale $\frac{3}{8}$in. to 1ft. The body is built in plywood on a framework with funnel, buffers, etc., cut from the solid. Inside the cab are regulator, steam gauge and pipes, fire door and seats, whilst the tender is also properly finished. This fine model was made by C. F. Hallett of Dorchester, whose only tools were a fretsaw, small files, glasspaper and the inevitable pocket knife.



A CHAPTER ON FRETMACHINES

IT is, undoubtedly, the ambition of every keen worker to be the possessor of a machine, and in view of the very large number who are already possessors, a chapter on the subject would not be out of place. The fretmachine, of course, has a great number of advantages over the handsaw.

First and foremost is the fact that it leaves both hands free to operate the work. The process is actually the reverse to the handframe. In the use of that, the sawblade moves through the wood. With the machine, the saw does not move forward at all, but the work is pressed up to it. The wood is held down to the table with both hands, and can naturally be turned and twisted with much more ease.

The sawblade, too, faces the worker and the wood is pressed up to it, whereas in the handframe the sawblade faces away from the worker, and cuts into the wood.

Choice of Machines

All machines work on the same principle, and there are several all built by Hobbies Ltd. from which to choose. The Gem is the cheapest of them all, and next to it comes the A1. The latter is an exceedingly popular machine, being heavily built, free from vibration and with strong wooden arms trussed up at the back to keep the proper tension on the sawblade.

A still better machine is the Triumph, which is exceedingly sweet running because it is fitted with ball bearings, and several other improvements.

The actual choice of machine largely depends on what the worker can afford, but he should certainly buy the best he can, although all are exceedingly good value. Each has its individual points, and further particulars with illustrated leaflets can be obtained from Hobbies Ltd., free.

The machines are supplied to workers in the British Isles, in a crate ready to use, but those living abroad receive them stripped. That is, the machine is taken to pieces and packed in a very small compass in a suitable case. This reduces considerably the shipping fees, etc., but the matter of assembly is quite straightforward because clearly written instructions are given as to the work involved. Each part is numbered and illustrated, so one can go ahead right away in putting the machine together again.

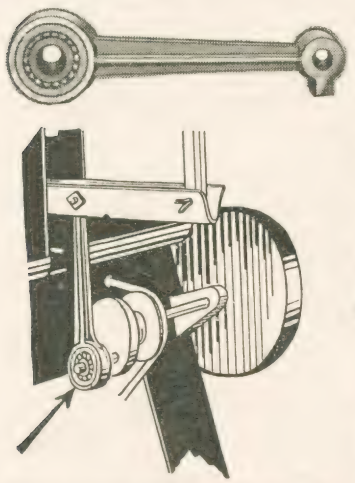
Test the Sawblade

It may be that when the machine first arrives, the small cramps holding the sawblade shackles to the arms, have become slightly pushed back. This will cause the blade to run out of true. A simple test should be made before you first undertake any work.

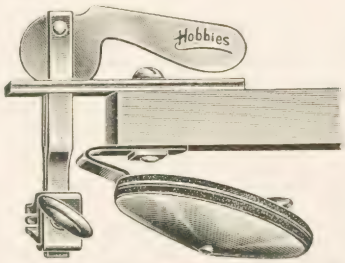
Stand a piece of wood about 1in. thick behind the blade when it is at the lowest point of its stroke. Let the wood just touch, and then, by hand, turn the wheel so the blade comes upwards. It should, if fitted correctly, touch the block of wood at the top and bottom of its stroke, leaving it slightly between.

To Adjust

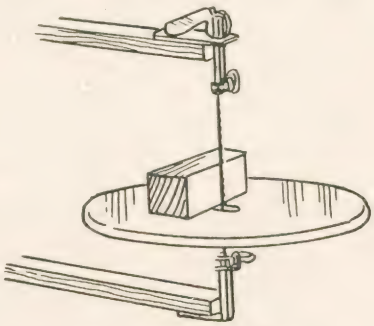
If, however, it touches the block at the top of the stroke and not at the bottom, the cramp



Above is a ball bearing accessory with a detail below showing it in use



How the lever is fixed when in use, with a dust blower in place under the arm



Put a block behind the saw to test if running true.

holding it to the arm must be moved slightly backwards. Unfasten the nut with a spanner, and gently tap the holding clamp back. Tighten the nut temporarily, and test the blade out again against its piece of wood. If it is now correct, tighten the nut up finally.

The same remarks apply to any side play which the saw may have. Put the block of wood to the sawblade again, this time at the side. Turn the machine by hand, and see that the blade travels up and down parallel with the side of the piece of wood. If it does not, the top or bottom clamp fixed to the arm must be pressed slightly to the left or right, as required, before being tightened up again.

Learn to Treadle

This is one of the essential points in the new machine. Several workers overlook the point, and then write in to say that the machine is not running true. It is a simple adjustment, and once made, no further attention should be required.

When one first has the machine of course, the operation of treadling is a little awkward, but it is surprising how soon one gets over this, and can work the saw at a very high speed. Both feet should be placed flat on the treadle plate, although some workers prefer to have just the toe of the left foot at the bottom left-hand edge. Sit straight to the machine, and get a comfortable position before starting.

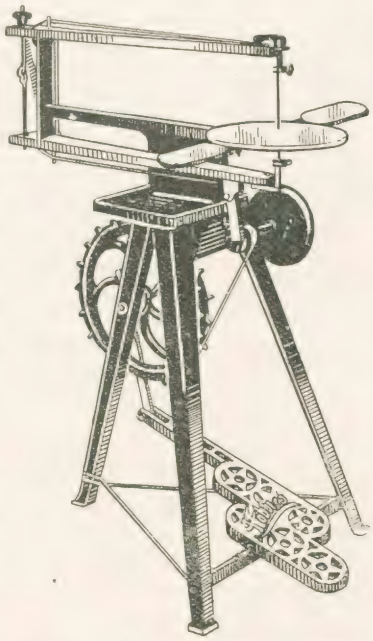
Control the Saw

Do not attempt at first to work up a high speed, but rather go slowly and control the work on to the saw properly. If you have been used to a handframe you will be surprised at the rate of cutting, and at first the work is rather apt to run away with you.

It is essential, too, to practice turning at various angles, and on curved lines, and the simple exercises shown earlier in this series will do well to follow on the machine.

The saw is fixed in clamps generally like those of the lever handframe explained earlier, and the tension is obtained by the special Hobbies lever. This is illustrated here in the correct position when the sawblade is tightened up.

When the machine arrives it may be the reverse way round, but it is a simple matter to lift it slightly in the square socket and turn it round so it can be operated correctly. The lever, of course, is thrown forward to allow the sawblade to be inserted, and then turned back to the position shown, for tightening up.



A machine with side wings for large work

The illustration also shows a useful accessory which can be obtained and easily fitted by the worker. One finds the dust accumulating round the cutting line when working at speed, and the worker usually has to blow this away to see where he is going. This little accessory does away with the trouble, because it is an automatic blower which is fixed to the front underside of the arm as shown.

A Dust Blower

The up and down action of the arm opens and closes the blower like a bellows, so that air is forced out through a hole directed on to the cutting line. Thus the saw-dust is blown away at each stroke when one is treadling fairly quickly.

When the machine is new, too, it will naturally work a little stiffly and, like a motor car, must be "run in" steadily at first. See the machine is clean and free from dust.

Oil Moving Parts

It is a good plan before beginning work to give it an oiling. This does not mean that the whole thing should be flooded all over, but merely that a suitable lubrication should be added to moving and running parts. A touch of oil can also be added occasionally, but not too frequently. For instance, the large wheel bearing the belt should be oiled through a hole which will be found in the hub.

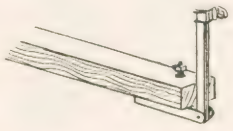
The bottom end of the wooden rod should also be given a touch of oil. The spindle which holds the small balance wheel under the table needs an occasional drop, as well as the short spindle which works on the eccentric under the lower arm. The arms themselves should not need any oiling, because they work on a special knife-edge washer, which reduces friction to a minimum. See that no oil gets on the leather belt.

A Loose Belt

This belt, by the way, may become loose after a considerable amount of usage. It should then be taken off, and the little metal clip holding the two ends together, taken out. About ¼in. of the belt itself should be cut away, and then the two ends clipped together again.

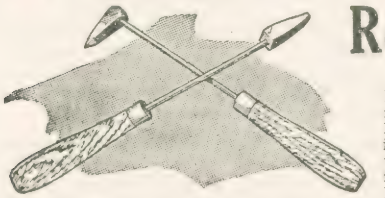
Put the belt over the back wheel first, then carry it forward to the small spindle wheel at the front, gradually working it over this by turning the wheel by hand.

(*To be continued*).



The underarm adjustment of the saw clamp

Do your own Soldering Repairs!



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Hobbies Ltd., Dereham.

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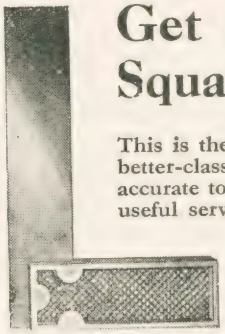
Post 4d.

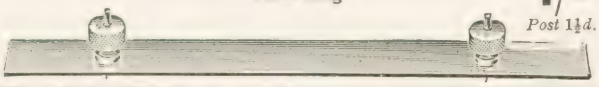


This is the square you find in the better-class tool sets. A strong accurate tool built for a lifetime of useful service.

Buy from your nearest Hobbies branch, or order direct from Hobbies Ltd., Dereham, Norfolk.

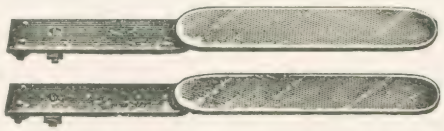
Cut Straight Lines with the Fretsaw

4 ins. long **1/-** *Post 1½d.*



Run the fretsaw along this Straight Edge and a perfectly straight line will result without damage to Saw-blade or Straight Edge.

Hobbies Ltd., Dereham and Branches



SIDE WINGS for Machines

These side wings may be fixed to all our small fretmachines (except "Gem") by the countersunk bolt supplied.
They are most useful for supporting long work and may be swung round parallel with the arms when not in use. **PRICE, per pair 4/6.** Post free 5/1

HOBBIES LTD. DEREHAM

Branches and Agents in Principal Towns

FREE! *Let us send you an illustrated list of HOBBIES Outfits. Address your request to Dereham, or call at any of the Hobbies branches.*

Hobbies

THE "ENSIGN"

Contains just the tools you need to make a start with, bright coloured design on wood ready for cutting. Full instructions on back of card. **4/6** *Post 9d.*

Must it be a Boxed Outfit?

Boxes cost money to produce. If you are looking for a set of tools at a moderate price... a set that gives you all the value in the tools themselves, choose either of the outfits shown here.

If you are buying an outfit for a gift to someone...or if you are buying for yourself, these outfits are the best value you can buy at the price.

HOBBIES LIMITED DEREHAM AND BRANCHES

THE "NELSON"

This outfit has more sawblades, a sandpaper block, rule and polished table not found in the "Ensign." It is an ideal presentation outfit. **6/-** *Post 9d.*

MISCELLANEOUS ADVERTISEMENTS

The small "to sell" or "wanted" announcements appearing below are accepted from readers who want to sell anything except fretwork goods, or from usual advertisers of bargains of interest. The advertisements are inserted at the rate of 2d. per word. Name and address are counted, but initials or groups, such as E.P.S. or £1/11/6 are accepted as one word. Postal Orders and Stamps must accompany the order. We cannot guarantee any date for these to appear, but they will be inserted in the earliest issue.

PATENTING INVENTIONS. Advice free.—King's Patent Agency Ltd., 146H Queen Victoria Street, E.C.4

TRAY HANDLES from 3d. pair.—Hobbies Ltd., Dereham.

BAND GUIDE FREE. Drums, Flutes, Bugles.—"Potters," 36 West Street, London, W.C.2.

VACANCIES FOR 750 BOYS. The ROYAL AIR FORCE requires 750 boys of good education (who must have attained age of 15 and be under 17 years on 1st January, 1936) for training as aircraft apprentices in skilled trades. No experience required. Good training, pay and prospects. Examination at local centres. Particulars from Royal Air Force (Dept. H.O.) Adastral House, Kingsway, London, W.C.2.

100 DIFFERENT STAMPS FREE to applicants for ½d. approvals. Big discount.—Cox, 21 Dennis Mansions, Westcliff.

YOU CAN GET THOSE SMALL WOOD SCREWS FROM HOBBIES. All sizes from ⅛in. round or flat head.—Hobbies Ltd., Dereham.

MAKE "FOILART" GLASS PICTURES. Fascinating. Inexpensive. Instructions and specimen Picture, 2/9.—Laws, 32 Wesley Avenue, Hounslow.

MAKE LEAD SOLDIERS, Animals, etc., for Christmas. Sample mould 2/9. Catalogue free.—Industries, 13 Gordon Avenue, Twickenham.

HANDY TOOL RACK, holds 12 tools. All steel, plated and polished. 1/- only, post 4d.—From Hobbies Ltd., Dereham.

MOVIES AT HOME. How to make your own Cinema Projector. Particulars free.—Moviescope (H), Pear Tree Green, Doddinghurst, Essex.

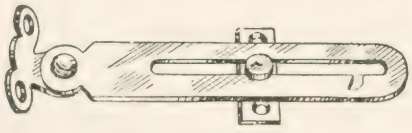
FRETWORK DRILLS from 8d., complete with extra drill points. All metal construction.—Hobbies Ltd., Dereham.

CHEAP COLONIAL STAMPS. Apply to White Sister's Convent, 22 Ladbroke Square, London, W.11.

HAWAIIAN GUITAR! Make your own from Hobbies' design and materials. Write for details to Hobbies Ltd., Dereham.

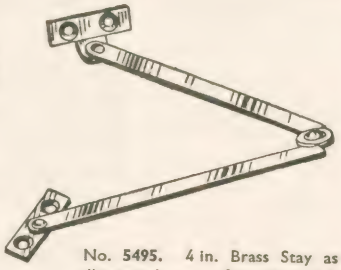
NOTICE.—Our Deposit System is probably of use to those desirous of seeing the goods before they buy. The would-be Buyer sends us his money and we write the Advertiser and give him the address of the person who wishes to buy. The goods are sent by the Advertiser to the Buyer on approval and when the purchaser gives us his consent we will forward the money to the Advertiser in payment of the goods which the purchaser will keep. In addition to the value of the goods, a Deposit Fee of 1/- must be enclosed to cover cost of our correspondence. Each party in the transaction will pay carriage one way. We cannot accept goods for exchange, nor any money for goods valued less than 5/-. All money should be sent by Registered Letter, but we cannot be responsible for any damage or loss incurred. All letters to be addressed to the Advertisment Manager, Hobbies Ltd., Dereham, Norfolk.

Cabinet Lid Stays



Just the thing for Gramophone Lids, Cabinets, etc., 5 inches long. Price 8d. each. Postage 1½d. Cheaper quality, also 5ins. long, 4½d. Postage 1½d.

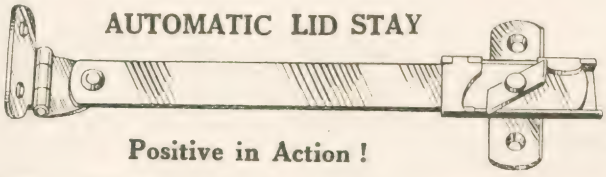
Next time you want a lid stay try one of these! They are nicely finished and good value at the prices quoted. The automatic stay is positive in action—with nothing to get out of order.



No. 5495. 4 in. Brass Stay as illustrated. 6d. Post 1½d.
No. 6178. 3 in. Heavy Brass Stay. 1/-. Postage 2d.

Buy from Hobbies own Branches or direct from Hobbies Limited, Dereham.

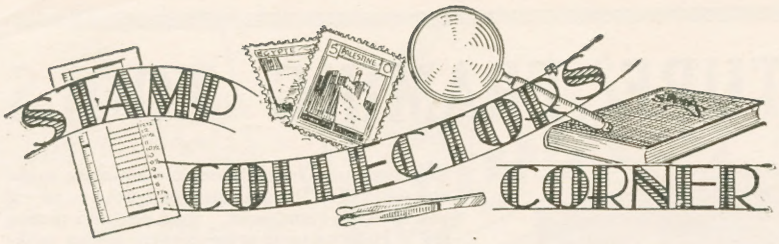
AUTOMATIC LID STAY



Positive in Action!

The lid is securely held in the open position, yet a slight touch releases the mechanism and allows it to be closed. The action is automatic and fool-proof.

No. 6191, Price 1/- Postage 2½d.



SOME NEW ISSUES

IT is, perhaps, rather more fortunate than otherwise that there should not be too many new issues to talk about this week. Fortunate for two reasons. First, so readers may have a little time in which to get their breath after all the Jubilee issues which have only just appeared. There has been such a large demand for these sets that many dealers have almost had to call a halt and ask for time in which to deliver the innumerable orders. Quite a number have, by now, advanced

Do you know this " Villa ? "

the prices quoted when the stamps first appeared.

The other reason is that it has been holiday time for most of us and the lighter evenings have kept collectors out of doors longer, so less time has been available for the mounting and studying stamps.

Some time ago readers were asked to help with the design of a stamp—the 'Garuda Bird' of Siam—and a very full and interesting reply was received. Again we ask assistance and feel sure some will be able to help us.

Rather unexpectedly Brazil has issued two stamps commemorating the four hundredth anniversary of the foundation of Pernambuco 1535. The design of the stamp (which is illustrated) is surmounted by a scroll bearing the words " Villa de Igarassy." Now the question is—To what do these words refer ? The writer can find no reference anywhere to Igarassy. Can any reader help ?

No doubt someone knows to what it refers and if they will be so good as to hand the information on,then a full explanation shall be given in these columns.

One of the great charms of the hobby of philately is that those who know a thing are always ready to help others. If you meet a philatelist who is a little more advanced than yourself you may be sure that you can obtain information from him. In some hobbies you find that this information is withheld.

TWO interesting views are depicted on the new Iceland stamps, views which remind one of the physiography of the country. One is a picture of Hecla, one of the twenty or so volcanoes which have been active within historic times. The other shows a picture

Two views from Iceland

of the Dynjandi falls, and this stamp is curiously similar to one of the " National Parks " issue of the United States of America.

We do not often in these days see an embossed stamp, but one has just been issued by Portugal in connection with the Portuguese Philatelic Exhibition. It is a 5 reis value, in red, with a tablet at the bottom showing the reason for its issue. The date 1853 refers to the date of the death of Queen Maria whose portrait is embossed, and the figure 40 shows the premium charged.

A double stamp from Portugal

The type of this stamp is very like the first issues of Portugal, except, of course, the tablet was missing, the earlier stamps were imperforate and the 5 reis value was yellow brown in colour. The date of this early issue was 1853.

Possibly some readers may have noticed in the Daily Press a paragraph relating to the retirement of the Court Postmaster, Captain F. A. Mason. Captain Mason was in charge of the King's post office at Buckingham Palace, Windsor Castle, Sandringham, Balmoral, and, in fact, wherever the King has been in residence. His last duties were on board the Royal yacht Victoria and Albert at Cowes. On his retirement he was invested with the insignia of a member of the Royal Victorian Order.

NATURE NOTES

Red Admiral's—Living Flowers

WHEN butterflies are in love, and dance in the sunlit summer zephyrs, they look all the world like a bunch of flowers in the wind—especially sweet-peas. The variation of butterfly colours is remarkable.

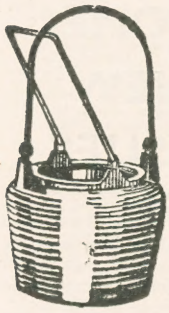
None however, can out-rival the Red Admiral, with its rich reds, orange, blue, pink and white.

One has to advance cautiously to admire its beauty, for, at the least noticeable sign of approach, the Admiral's wings jump up, to make it hardly conspicuous, with its drab dark grey colour of the under parts of the wings only showing on the closed wings.

Closed up like this, it looks exactly like a faded leaf, which serves as camouflage and protection against its enemies.

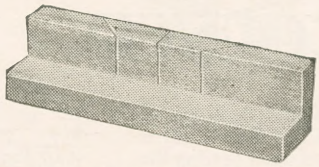
It is really remarkable that such a dainty ornament should battle its way over the North Sea, but so it does, although many hibernate here, One often sees small Red Admirals about in days of early spring.

PICTURE FRAMING TOOLS



GLUE KETTLE

A nice little kettle in cast iron. Dull nickelled finish and just the right size for the handyman. Price 2/3. postage 9d.

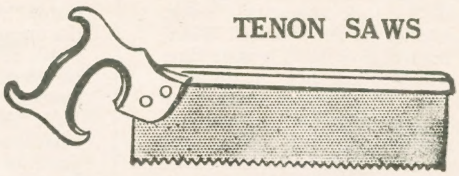


MITRE BLOCKS

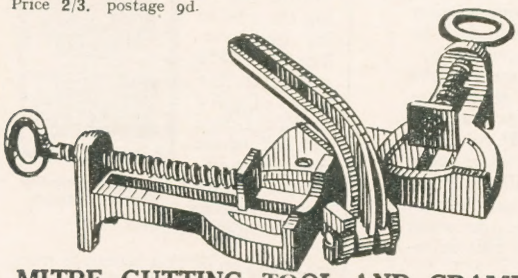
A hardwood block, 9ins. long. Just the thing for small mouldings, Price 9d., post 6d. Other mitre blocks with metal saw guides, 2/6 and 3/6. Postage 6d.

Next time you want a frame for a picture make one yourself. It's easy and straightforward—if you have the right tools. And you save money too ! Hobbies tools bring picture frame making within the reach of everybody's pocket. Make a start on your first picture now !

TENON SAWS

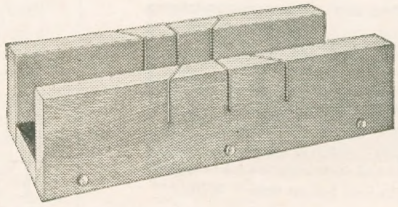


For the small mitre blocks a 10in. saw is required. This with iron back costs only 2/6, whilst a 12in. is 2/9. A 14in. saw of superior quality suitable for the mitre cramp costs 4/6, postage 6d. on each.



MITRE CUTTING TOOL AND CRAMP

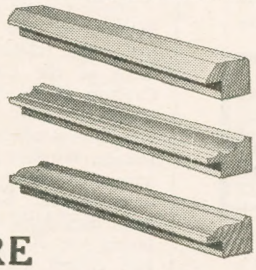
The ideal mitre-cutting tool. The moulding is held in right and left hand cramps. The long metal saw guide ensures a clean accurate mitre. The No. 1 Tool takes mouldings up to 4½ins. wide and costs only 10/6, post 1/-. The No. 2 cramp is of heavier construction all round, and takes mouldings up to 5½ins. wide. Price 17/6, post 1/3



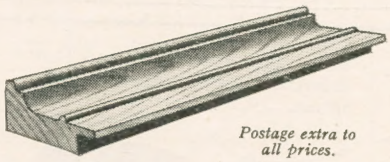
MITRE BOX

The moulding is laid in the trough between the sides. This tool can be thoroughly recommended. In selected hardwood. Price 2/3, post 9d.

A few of the special picture frame mouldings supplied by Hobbies. These are in Oak, ⅜-in. wide and cost only 1½d. per ft.

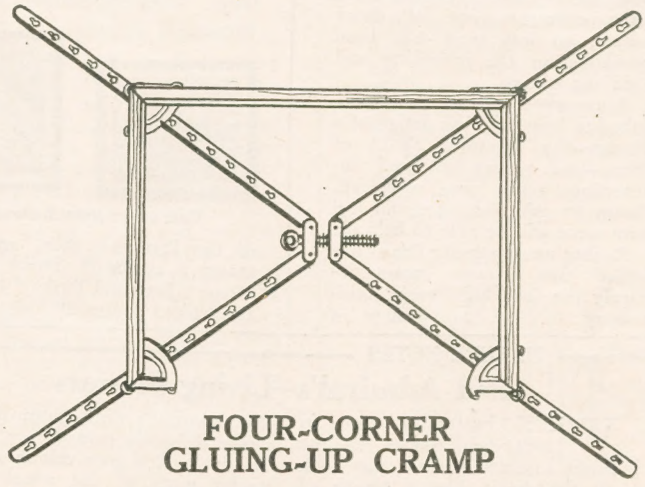


PICTURE FRAME MOULDING



Postage extra to all prices.

An attractive Oak Moulding in three sizes. 1in. wide 2d. per ft. 1½ins. 3d. 2ins. 3½d. per ft.



FOUR-CORNER GLUING-UP CRAMP

With a tool like this you can glue up all four corners at once. The pressure is applied by one central screw, so that it is equally distributed to each corner. In two sizes. No. 1 for frames up to 38 by 26ins. Price 13/6. No. 2 for frames up to 52 by 33ins. Price 17/6. Postage 1/3 on either.

You can buy all your requirements for Picture Framing from Hobbies Branches and Agents, or direct from Hobbies Limited, Dereham, Norfolk.

HOBBIES LTD.

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Below are the addresses where Hobbies goods can be purchased. In addition, all leading stores and ironmongers stock or can obtain your requirements in fretwork and woodwork, designs, wood, turned legs, moulding, polish, wireless accessories, etc., etc.

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LONDON - - - - 83 NEWINGTON BUTTS, S.E.11.
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HEAD OFFICE AND WORKS:

DEREHAM, NORFOLK

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EDITORIAL.

All Editorial matter should be sent to The Editor, Hobbies Weekly, Dereham, Norfolk. If enclosed with orders or other matter for Hobbies Ltd., it should be written on a separate sheet of paper. Any matter requiring an answer must have a stamped addressed envelope enclosed.

DESIGN SHEETS.

The presentation Design Sheet is given only with current copies of Hobbies Weekly and not with back numbers. The designs, however, can be obtained separately, from Hobbies Ltd., price 4½d., post free, or 10d. in the case of double size sheets.

ADVERTISEMENTS.

All orders and letters respecting advertisements should be addressed either to the Advertisement Manager. Hobbies, Dereham, Norfolk or to 52 Bedford Street, Strand, London, W.C.2.

INDEXES AND BINDING CASES.

An Index for any volume is obtainable for 4½d. post free, and Binding Cases to take a complete set of 26 issues (making the volume) are supplied for 1/6, or sent post free for 1/8. The Cases are in red linen with gold blocked name on the front. The Azaloo Binder to hold 24 copies which you can fix in yourself is 3/3 (3/6 post free) including two dozen fastening staples.

BACK COPIES.

Back copies are obtainable from the Editorial address given above or from the Publisher, price 2d. a copy, plus postage.

CONTRIBUTIONS.

The Editor is always pleased to consider suitable articles for these pages, which, if accepted, will be paid for at the usual rates. While every effort will be made to return unsuitable contributions (if stamps for that purpose are sent with them), the Editor does not accept any responsibility for their loss.

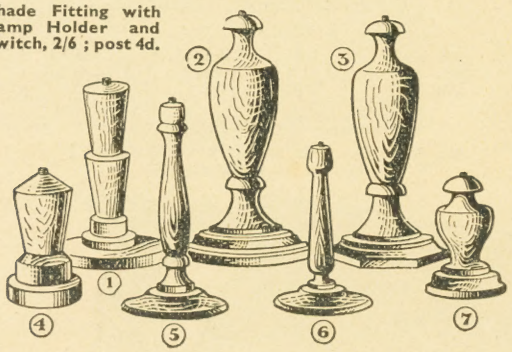
SUBSCRIPTION.

Hobbies will be forwarded by post to any part of the world at the following prepaid rates. Twelve months 13/-, six months 6/6, three months 3/3. Registered for transmission by Canadian Magazine Post.

Lamp Standards

Centre and base bored ready for the flex. Fitted with plug to take shade and lamp fitting. Beautifully turned in Oak and Beech. No. 3 has a specially weighted base for use where a large shade is required.

Shade Fitting with Lamp Holder and Switch, 2/6; post 4d.



No. 1 Beech, 9ins. 2/6 **No. 2 Beech, 10¾ins. 2/6**
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Postage Extra.

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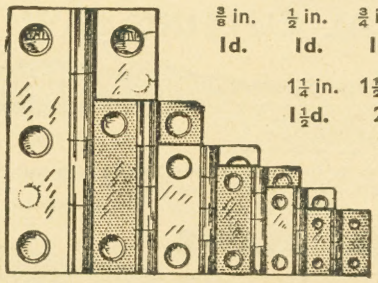
Brass Hinges suitable for Fretwork and light Carpentry. Order screws at the same time to save postage. Brass screws 2½d. doz., Iron 1½d. doz.

PRICE PER PAIR

⅜ in.	½ in.	¾ in.	1 in.
1d.	1d.	1d.	1d.
1¼ in.	1½ in.	2½ in.	
1½d.	2d.	4d.	



Postage 1½d. on any quantity

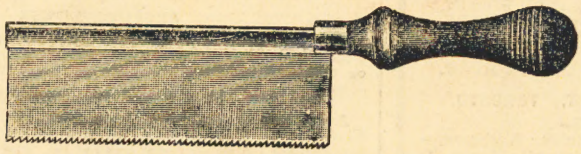
If the hinges you want are not listed here, call at any Hobbies Branch, or write to Hobbies Limited, Dereham, Norfolk.

REPLY COUPON

One of these small Coupons and a stamp for 1½d. must be attached to your letter to the Editor, if you are enquiring about anything which demands an answer. Cut the Coupon out and put it in with your letter which should be addressed to The Editor, Hobbies Weekly, Dereham, Norfolk

SAWS for the Handyman

A saw for practically every requirement of the home woodworker! Saws to give you dependable service yet offered at real competitive prices. You make no mistake when you buy from Hobbies.



BRASS BACK SAW

Just the saw for cutting beadings and small mouldings. The finely spaced teeth leave practically no "burr."

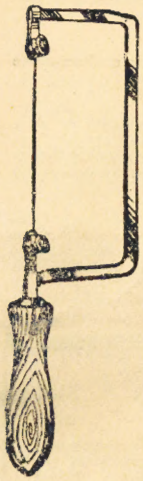
No. 125. Price 1/3 Postage 4d.

KEYHOLE SAW

Most carpenters and handymen know the value and usefulness of the Keyhole Saw. This one is well made and finished to give satisfactory service.

Price 9d. Post 3d.

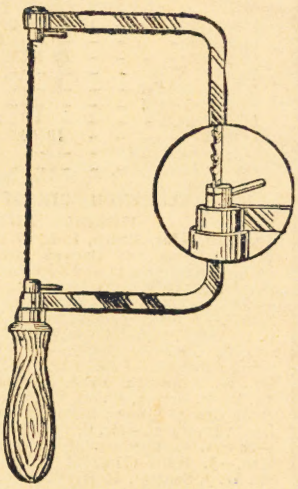
Separate Blades 4d. each. Post 1½d.



JEWELLER'S SAW

This saw takes a standard 5in. wood or metal fretsaw blade. A strong spring enclosed in the handle gives the required tension.

Price 2/3 Post 3d.



COPING SAW

You can turn the blade in this Coping Saw for cutting large work. The blade is 6½ins. long.

Price 2/6 Post 4d.

Spare blades, 3d. each; 2/6 doz. Post 2d.

TENON SAWS

BRASS BACK

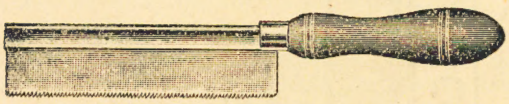
6in. blade	... 1/9	7in. blade	... 1/10
8in. „	... 2/-	9in. „	... 2/3
10in. „	... 2/9	12in.	... 3/-

IRON BACK

9in. blade 2/- 10in. blade 2/6 12in. blade 2/9

Postage 6d. extra on each.

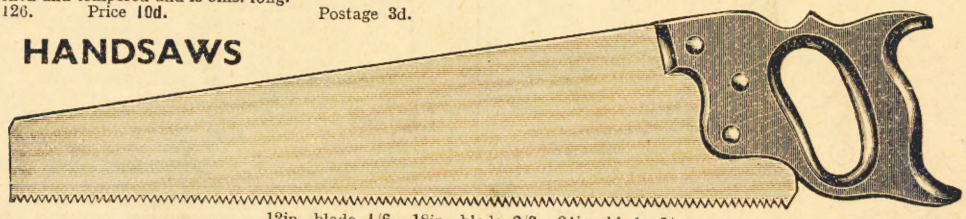
METAL CUTTING SAW



A useful Saw for the metal-worker. The blade is specially hardened and tempered and is 5ins. long.

No. 126. Price 10d. Postage 3d.

HANDSAWS



12in. blade 1/6 18in. blade 2/3 24in. blade 3/-

SUPERIOR QUALITY.

18in. blade 3/6 24in. blade 4/- 26in. blade 4/6

Postage 6d.

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